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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of California-American Water
Company (U210W) for Authorization to Increase
its Revenues for Water Service by \$55,771,300 or
18.71% in the year 2024, by \$19,565,300 or 5.50%
in the year 2025, and by \$19,892,400 or 5.30% in
the year 2026.

Application 22-07-XXX

DIRECT TESTIMONY OF IAN C. CROOKS
(FINAL APPLICATION)

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Dated: July 1, 2022

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. PURPOSE AND ORGANIZATION OF TESTIMONY.....	3
III. CALIFORNIA AMERICAN WATER ENGINEERING GROUP	3
IV. CAPITAL INVESTMENT MANAGEMENT PROCESS.....	4
V. INFRASTRUCTURE STATUS AND PLANNING	7
VI. DEVELOPER AND CONTRIBUTED PROJECTS – ALL DISTRICTS	12
VII. RECURRING PROJECTS	13
A. Project Code R15-xxA1 – Mains – New.	14
B. Project Code R15-xxB1 – Mains – Replacement/Renewal.	15
C. Project Code R15-xxC1 – Mains – Unscheduled.	15
D. Project Code R15-xxD1 – Mains – Relocated.	15
E. Project Code R15-xxE1 – Hydrants and Valves– New.	15
F. Project Code R15-xxF1 – Hydrants and Valves – Replacements.....	16
G. Project Code R15-xxG1 – Services – New.....	16
H. Project Code R15-xxH1 – Services – Replacement.	16
I. Project Code R15-xxI1 – Meters – New.....	16
J. Project Code R15-xxJ1 – Meters – Replacement.	17
K. Project Code R15-xxK1 – ITS Equipment and Systems.	17
L. Project Code R15-xxL1 – SCADA.....	17
M. Project Code R15-xxM1 –Security.....	17
N. Project Code R15-xxN1 –Offices and Operations Center.	17
O. Project Code R15-xxP1 –Tools and Equipment.	18
P. Project Code R15-xxQ1 –Plant – Replacements/Additions.	18
Q. Project Code R15-xxR1 –Tank Réhabilitation.	18
VIII. ENTERPRISE SOLUTIONS PROJECTS	20
IX. CAPITAL INVESTMENT PROJECTS.....	21
X. COMPLETED CAPITAL INVESTMENT PROJECTS	22

1	A.	San Diego County District Completed Projects.....	25
2	1.	Project Code I15-300010-01 SD-Replace 52,000 Ft of 16" Main- The Strand, Phase 1 Imperial Beach (PORTION COMPLETED)	25
3	2.	Project Code I15-300015, SD- Replace 500 Ft of 20" Main in Palm Avenue (COMPLETED)	26
4	3.	Project Code I15-300017, SD-Small Main Replacement Program (COMPLETED)	26
5	4.	Project Code I15-300024-01, SD-Main Replacement Program 2021-2023, subproject: Glorietta Blvd Main Replacement (PORTION COMPLETED).....	26
6			
7	B.	Los Angeles County District Completed Projects	27
8	1.	Project Code I15-500020, LA-Spinks Reservoir Booster Station Improvements (COMPLETED)	27
9	2.	Project Code I15-500021, LA-Rosemead Reservoir Reconstruction (COMPLETED).....	27
10	3.	Project Code I15-500037, LA-Combine Domestic/Irrigation System in Duarte (COMPLETED)	27
11	4.	Project Code I15-500038, LA-Booster Station Upgrades (2018-2020) (COMPLETED).....	28
12	5.	Project Code I15-500041, LA-Upgrade SCADA System (COMPLETED).....	28
13	6.	Project Code I15-500057, LA-Annual Main Replacement Program (2018-2020) (COMPLETED)	29
14	7.	Project Code I15-500062, LA-Mission View Well 2 Treatment (COMPLETED).....	29
15			
16	C.	Ventura County District Completed Projects	30
17	1.	Project Code I15-510026, VEN-Replace Los Robles Booster Station (COMPLETED).....	30
18	2.	Project Code I15-510027, VEN-Upgrade Mayfield Booster Station (COMPLETED).....	30
19	3.	Project Code I15-510031, VEN-Upgrade Wildwood Hydro Booster Station (COMPLETED)	31
20	4.	Project Code I15-510037, Ventura Tank Rehabilitation 2015-2017 (COMPLETED).....	31
21			
22	D.	Central Division Completed Projects.....	32
23	1.	Project Code I15-400096, SCADA Upgrade Program (2018-2020) (COMPLETED).....	32
24			
25			
26			
27			
28			

1	2.	Project Code I15-400106, New Well Development Program (2018-2020) (COMPLETED).....	32
2	3.	Project Code I15-400113, Replace Carola #1 Tank (COMPLETED).....	33
3	4.	Project Code I15-400114, Replace Chualar Tank #1 (COMPLETED).....	33
4	5.	Project Code I15-400118, Valves and PRVs Program (2018-2020) (COMPLETED).....	33
5	6.	Project Code I15-400119, Fire Protection Improvement Program (2018-2020) (COMPLETED)	34
6	7.	Project Code I15-400120, Pump Station Rehab Program (2018-2020) (COMPLETED).....	34
7	8.	Project Code I15-400121, Main Replacement Program (2018-2020) (COMPLETED).....	34
8	9.	Project Code I15-400123, Annual Program - Well Rehab Program (2018-2020) (COMPLETED)	35
9	10.	Project Code I15-400124, Huckleberry Hydropneumatic Tank Replacement (COMPLETED)	36
10	11.	Project Code I15-400125-01, 02, 03, 07, 09, 11 Main Replacement Program (2021-2023) (PORTION COMPLETED)	36
11	12.	Project Code I15-400129-05, 06, 07 Tank Rehabilitation Program (2021-2023) (PORTION COMPLETED).....	36
12	13.	Project Code I15-400131, Well Rehabilitation Program (2021-2023) (PORTION COMPLETED)	37
13	14.	Project Code I15-400149-01, 02 MRY-CRRDR Property Rockfall Safety Project, Phase 1 and Phase 2 (COMPLETED)	37
14	15.	Project Code I15-400151, MRY-LPD Siphon/Fish Trap Improvements Project, (COMPLETED)	37
15	16.	Project Code I15-420005, MWW-Las Palmas Chlorine Contact Basin (COMPLETED).....	37
16	17.	Project Code I15-480010, Toro Booster Station Replacement (COMPLETED).....	38
17	18.	Project Code I15-490001, Garrapata Slide Recovery (COMPLETED).....	38
18	E.	Northern Division Completed Projects.....	39
19	1.	Project Code I15-600032, Walerga Road Bridge Pipeline (COMPLETED).....	39
20			
21			
22			
23			
24			
25			
26			
27			
28			

1	2.	Project Code I15-600051, Arden Intertie (COMPLETED).....	40
2	3.	Project Code I15-600067, Isleton Distribution System Improvement (COMPLETED)	40
3	4.	Project Code I15-600068, Sacramento District Annual SCADA Maintenance Program 2018-2020 (COMPLETED)	41
4			
5	5.	Project Code I15-600071, Sacramento District Annual Well Rehabilitation Program (2018-2020) (COMPLETED)	42
6	6.	Project Code I15-600072, Sacramento District Main Replacement Program (2018-2020) (COMPLETED)	43
7			
8	7.	Project Code I15-600083, Sacramento District Backyard Main Replacement Program (COMPLETED)	43
9	8.	Project Code I15-610023, Larkfield District Wildfire Water System Recovery – Meters and Services (COMPLETED)	44
10			
11	9.	Project Code I15-620002, Dunnigan Wastewater District System Improvements (COMPLETED)	44
12	10.	Project Code I15-650001, Meadowbrook District Hydropneumatic Tanks and Electrical Upgrades (COMPLETED)	44
13			
14	XI.	CARRY-OVER CAPITAL INVESTMENT PROJECTS	45
15	A.	San Diego County District Previously Approved Carry-over and Ongoing IP	45
16			
17	1.	Project Code I15-300006, San Diego PRV Modernization Program (ONGOING)	45
18	2.	Project Code I15-300008, Replace 2,450 Feet of 18-inch diameter main in Elm Avenue (CARRY-OVER).....	47
19			
20	3.	Project Code I15-300010, Silver Strand 16-inch diameter Transmission Main Replacement (CARRY-OVER)	49
21	4.	Project Code I15-300014, Coronado Reliability Supply Project (CARRY-OVER)	51
22			
23	5.	Project Code I15-300018, SCADA Improvements (CARRY- OVER)	52
24	6.	Project Code I15-300021, Strand Two-Way Pump Station (CARRY-OVER)	53
25			
26	7.	Project Code I15-300022, Remove Navy Amphibious Base (NAB) Abandoned Pump Station Vault (CARRY-OVER)	55
27	8.	Project Code I15-300024, Main Replacement Program (2021- 2023) (ONGOING PROGRAM)	56
28			

B.	Los Angeles County District Previously Approved Carry-over and Ongoing IP	57
1.	Project Code I15-500009 (IP-0550-118), LA-Santa Fe Well Replacement (CARRY-OVER)	57
2.	Project Code I15-500022, Crownhaven Well (Duarte Water Supply Improvement Project, IP-0550-170) (CARRY-OVER)	59
3.	Project Code I15-500030 (IP-0550-38), LA-Oswego Well Replacement and Treatment (CANCELLED)	60
4.	Project Code I15-500032, Winston Well Redrill and Treatment (CANCELLED)	61
5.	Project Code I15-500036, Rehabilitate/Redrill Longden Well (CARRY-OVER)	62
6.	Project Code I15-500048, Arlington Well TCE Treatment (Project A-3, Baldwin Hills) (CARRY-OVER)	64
7.	Project Code I15-500050, Patton Tank Replacement (Project B-x, San Marino) (CARRY-OVER)	65
8.	Project Code I15-500054, Chromium VI Water Treatment (CARRY-OVER)	66
9.	Project Code I15-500058, Tier 4 Compliance – Standby Power (CARRY-OVER)	67
10.	Project Code I15-500060, Rosemead Operations Center (CARRY-OVER)	68
11.	Project Code I15-500065, LA-Standby Generator Improvement Program (2021-2023) (ONGOING)	70
12.	Project Code I15-500066, Main Replacement Program (2021-2023) (ONGOING)	72
13.	Project Code I15-500067, Well Installation and Rehabilitation Program (2022-2023) (ONGOING)	74
14.	Project Code I15-500068, SCADA Maintenance and Improvements Plan (2021-2023) (ONGOING)	76
15.	Project Code I15-500069, Pump Station and PRV Rehabilitation Program (2021-2023) (ONGOING)	78
16.	Project Code I15-500070, Well Rehabilitation Program (2021-2023) (ONGOING)	79
17.	Project Code I15-500071, Tank Rehabilitation and Seismic Upgrades Program (2021-2023) (ONGOING)	79
18.	Project Code I15-500073, Tank Replacement Program (2021-2023) (ONGOING)	80

C.	Ventura County District Previously Approved Carry-over and Ongoing Projects.....	82
1.	Project Code I15-510017 (IP-0551-88), Connect 12" Main between Hillcrest and Lawrence Drive (CARRY-OVER)	82
2.	Project Code I15-510028, Replace 1,400 Feet of 10-inch Main to Las Posas Tanks (CANCELLED).	83
3.	Project Code I15-510030, Upgrade Springwood Booster Station (CARRY-OVER).....	84
4.	Project Code I15-510032, Replace White Stallion Domestic Booster Station (CARRY-OVER)	85
5.	Project Code I15-510033, Upgrade Wildwood Booster Station (CARRY-OVER).....	87
6.	Project Code I15-510040, Tier 4 Compliance/Standby Power (CARRY-OVER).....	87
7.	Project Code I15-510042, SCADA Maintenance and Improvements Program (2021-2023) (ONGOING)	88
8.	Project Code I15-510043, Springwood Gradient Main Replacement (CARRY-OVER)	89
9.	Project Code I15-510044, Los Robles Zone PRVs (CARRY-OVER)	90
10.	Project Code I15-510045, St. Charles Oaks Apartment Main Replacement (CARRY-OVER)	91
11.	Project Code I15-510054, Tank Rehabilitation and Seismic Upgrades Program (2021-2023) (ONGOING)	92
12.	Project Code I15-510056 (formerly I15-510041), Pump Station Replacement and Rehabilitation Program (2021-2023) (ONGOING)	93
D.	Monterey County District Previously Approved Carry-over and Ongoing Projects.....	94
1.	Project Code I15-400097, Interconnect RR, HH, Bishop (CARRY-OVER).....	94
2.	Project Code I15-400108, Standby Power/Emergency Generators (CARRY-OVER)	96
3.	Project Code I15-400109, Los Padres Dam Facilities Improvements (CARRY-OVER).....	97
4.	Project Code I15-400110, Phase 1 BIRP Improvements (CARRY-OVER).....	98
5.	Project Code I15-400117, Los Padres Dam DSOD (CARRY-OVER)	99

1	6.	Project Code I15-400122, Los Padres Dam NMFS MOA Requirements (CARRY-OVER).....	100
2	7.	Project Code I15-400125, Main Replacement Program (2021-2023) (ONGOING).....	101
3	8.	Project Code I15-400126, Fire Protection Program (2021-2023) (ONGOING).....	102
4	9.	Project Code I15-400127, Pump Station Rehabilitation Program (2021-2023) (ONGOING)	104
5	10.	Project Code I15-400128, SCADA Maintenance and Improvements Program (2021-2023) (ONGOING)	105
6	11.	Project Code I15-400129, Tank Rehabilitation Program (2021-2023) (ONGOING).....	107
7	12.	Project Code I15-400131, Well Rehabilitation Program (2021-2023) (ONGOING).....	108
8	13.	Project Code I15-400133, Phase 2 BIRP Improvements (CARRY-OVER).....	109
9	14.	Project Code I15-400135, Arc Flash Mitigation (CARRY-OVER)	111
10	15.	Project Code I15-400136, Ambler Water Treatment Solids Residual Handling (CARRY-OVER).....	112
11	16.	Project Code I15-400137, Del Rey Regulating Station (CARRY-OVER).....	113
12	17.	Project Code I15-400138, Rancho Fiesta Tanks and Pump Station (CARRY-OVER).....	113
13	18.	Project Code I15-400140, Standby Generator Improvement Program (2021-2023) (ONGOING)	115
14	19.	Project Code I15-400141, New Carmel Valley Well (2021-2022) (CARRY-OVER).....	116
15	20.	Project Code I15-400143, Forest Lake Pump Station (CARRY-OVER)	117
16	E.	Monterey County Wastewater District Previously Approved Carry-over and Ongoing IP	118
17	1.	Project Code I15-420003, Las Palmas MBBR Installation (CANCELLED)	118
18	2.	Project Code I15-420004, Spreckels Blvd. Main Replacement (CARRYOVER)	119
19	F.	Sacramento District Carry-over and Ongoing Projects	120

1	1.	Project Code I15-600066, Suburban-Rosemont Route 50 Crossing (CANCELLED).....	120
2	2.	Project Code I15-600082, Sacramento Generator Improvements Program (CARRY-OVER).....	120
3	3.	Project Code I15-600088, Sacramento District Water Quality Monitoring Program (CANCELLED).....	121
4	4.	Project Code I15-600097, Main Replacement Program (2021-2023) (ONGOING).....	121
5	5.	Project Code I15-600098, Sacramento Well Installation and Replacement Program (2021-2023) (ONGOING).....	122
6	6.	Project Code I15-600099, Sacramento District Annual Well Rehabilitation Program (2021-2023) (ONGOING).....	123
7	7.	Project Code I15-600100, SCADA Maintenance and Improvement Program (2021-2023) (ONGOING).....	123
8	8.	Project Code I15-600101, Sacramento Generator Improvements Program (2021-2023) (ONGOING).....	124
9	9.	Project Code I15-600102, Service Saddle Replacement Program (2021-2023) (ONGOING).....	125
10	10.	Project Code I15-600103, Suburban Rosemont Hydraulic Improvements Project (CARRY-OVER).....	126
11	11.	Project Code I15-600104, Security Park Booster Pump Station (CARRY-OVER).....	126
12	12.	Project Code I15-640001, Geyserville Storage Project (CARRY-OVER).....	127
13	13.	Project Code I15-650002, Meadowbrook Storage Project (CARRY-OVER).....	128
14	14.	Project Code I15-660002, Fruitridge Vista Main Replacement Program (2021-2023) (ONGOING).....	129
15			
16	G.	Larkfield District Previously Approved Carry-over and Ongoing IP.....	131
17	1.	Project Code I15-610009, Londonberry Drive Creek Crossing (CARRY-OVER).....	131
18	2.	Project Code I15-610012, Replacement of the Backwash Tank at the Larkfield WTP (CARRY-OVER).....	132
19	3.	Project Code I15-610015, LRK- Larkfield Main Replacement Program (2021-2023) (ONGOING).....	132
20	4.	Project Code I15-610016, LRK- Larkfield Well Rehabilitation and Maintenance Program (2021-2023) (ONGOING).....	133
21			
22			
23			
24			
25			
26			
27			
28			

1	5.	Project Code I15-610017, LRK- SCADA Master Plan and Improvements Program (2021-2023) (ONGOING)	134
2	6.	Project Code I15-610018, LRK- Tank Rehabilitation and Seismic Upgrades (2021-2023) (ONGOING)	135
3	7.	Project Code I15-610019, Larkfield Generator Projects (CARRY OVER)	135
4	8.	Project Code I15-610020, Larkfield Emergency Interconnection with Windsor (CARRY OVER)	137
5	9.	Project Code I15-610021, Larkfield Water Storage at WTP (CARRY OVER)	138
6	10.	Project Code I15-610022, Wikiup Drive Main Replacement (CARRY OVER)	139
7			
8			
9			
10	XII.	PERFORMED OR PLANNED BUT NOT YET ADOPTED CAPITAL INVESTMENT PROJECTS	140
11	A.	Southern Division Projects Performed or Planned, but Not Yet Adopted.....	140
12			
13	1.	Project Code I15-510041, Ventura PSPS Power Storage Project (“SGIP”) (PLANNED, NOT YET ADOPTED).....	140
14	2.	Project Code I15-570001, El Rio New Interconnect with United Water (PLANNED, NOT YET ADOPTED).....	142
15			
16	B.	Central Division Projects Performed or Planned, But Not Yet Adopted.....	143
17	1.	Project Code I15-400144, Carmel River Reroute and Dam Removal (“CRRDR”) Pipeline Removal Project (PLANNED, NOT YET ADOPTED).....	143
18	2.	Project Code I15-400149-01, 02 MRY-CRRDR Project Rockfall Safety Project, Phase 1 and Phase 2 (PERFORMED, NOT YET ADOPTED).....	143
19	3.	Project Code I15-400150, MRY-CRRDR Property Landscape and Irrigation Wildfire Recovery CEMA 2020 (PLANNED, NOT YET ADOPTED).....	144
20	4.	Project Code I15-400151, MRY-Los Padres Dam Siphon and Fish Trap Improvements (PERFORMED, NOT YET ADOPTED).....	145
21	5.	Project Code I15-400152, Los Padres Dam Outlet Modifications (PLANNED, NOT YET ADOPTED).....	145
22	6.	Project Code I15-420005, Las Palmas Wastewater Treatment Plant Chlorine Contact Basin (PERFORMED, NOT YET ADOPTED).....	146
23			
24			
25			
26			
27			
28			

1	7.	Project Code I15-420006, Carmel Valley Ranch Wastewater Plant Filter and Screen Upgrades (PLANNED, NOT YET ADOPTED).....	146
2			
3	8.	Project Code I15-480014, New Toro Well #4 (PLANNED, NOT YET ADOPTED).....	147
4	C.	Northern Division Projects Performed or Planned But Not Yet Adopted.....	148
5			
6	1.	Project Code I15-660003, Fruitridge Vista Well Rehabilitation Program (2021-2023) (PLANNED, NOT YET ADOPTED).....	148
7	XIII.	ADVICE LETTER CAPITAL INVESTMENT PROJECTS	149
8	A.	Northern Division Advice Letter Capital Improvement Projects	149
9			
10	1.	Project Code I15-610002, Faught Road Well (ADVICE LETTER) (CANCELLED).....	149
11	XIV.	MEMO ACCOUNT CAPITAL INVESTMENT PROJECTS	149
12	A.	Larkfield District Memo Account Projects.....	149
13			
14	1.	Project Code I15-610014, Larkfield Wildfire Upper Wikiup Tank Site (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED).....	149
15			
16	2.	Project Code I15-610023, Larkfield Wildfire Water Distribution System Recovery (MEMO ACCOUNT) (COMPLETED).....	150
17	B.	Sacramento District Memo Account Projects.....	151
18			
19	1.	Project Code I15-620002, Dunnigan Wastewater Improvements Project (MEMO ACCOUNT) (COMPLETED).....	151
20			
21	2.	Project Code I15-630002, Dunnigan Water System Improvements (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED).....	152
22			
23	3.	Project Code I15-630004, Dunnigan New Well No. 3 (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)	153
24			
25	4.	Project Code I15-640003, Geyserville PSPS Generator Improvements (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED).....	153
26			
27	5.	Project Code I15-660001 (formerly I15-600105), Fruitridge Vista Meter Installation (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED).....	154
28			
	6.	Project Code I15-670001, Public Safety Power Shutoffs Generator Improvements (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED).....	155

1	7.	Project Code I15-670002, New Coarsegold Iron & Manganese Water Treatment Plant Project (MEMO ACCOUNT-PLANNED, NOT YET ADOPTED).....	156
2			
3	8.	Project Code I15-670003, New Goldside Iron & Manganese Water Treatment Plant Project (MEMO ACCOUNT-PLANNED, NOT YET ADOPTED).....	157
4			
5	XV.	PROPOSED NEW CAPITAL INVESTMENT PROJECTS	157
6	A.	Corporate New Projects	157
7			
8	1.	Project Code I15-010003, Corporate Headquarters Relocation and New Sacramento Operations Center (PROPOSED PROJECT)	157
9	B.	San Diego County District Proposed New Projects.....	160
10			
11	1.	Project Code I15-300020, Coronado Storage Tank and Pump Station (PROPOSED PROJECT)	160
12	2.	Project Code I15-300023, Transbay Transmission Main Rehabilitation Project (PROPOSED PROJECT).....	163
13	3.	Project Code I15-300026, Main Replacement Program (2024-2026) (PROPOSED PROJECT)	165
14	4.	Project Code I15-300027, San Diego Alternative Source of Supply Project (2024-2026) (PROPOSED PROJECT).....	166
15			
16	C.	Los Angeles County District Proposed New Projects	168
17			
18	1.	Project Code I15-500074, LA-Main Replacement Program (2024-2026) (PROPOSED PROJECT)	170
19	2.	Project Code I15-500075, LA-Pump Station and PRV Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	171
20	3.	Project Code I15-500076, LA-SCADA Maintenance and Improvements Program (2024-2026) (PROPOSED PROJECT).....	172
21	4.	Project Code I15-500077, LA-Tank Rehabilitation and Seismic Upgrades Program (2024-2026) (PROPOSED PROJECT)	173
22			
23	5.	Project Code I15-500078, LA-Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT).....	174
24	6.	Project Code I15-500079, LA-Well Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	176
25			
26	7.	Project Code I15-500080, LA-Tank Replacement Program (2024-2026) (PROPOSED PROJECT)	177
27	8.	Project Code I15-500081, LA-Standby Generator Improvement Program (2024-2026) (PROPOSED PROJECT).....	179
28			

1	9.	Project Code I15-560001, East Pasadena Well #8 Treatment (2022-2025) (PROPOSED PROJECT)	179
2	10.	Project Code I15-560002, East Pasadena Booster Station Improvement Program (2024-2026) (PROPOSED PROJECT)	181
3	11.	Project Code I15-560003, East Pasadena Raymond Basin Replacement Well (2024-2026) (PROPOSED PROJECT)	181
4	12.	Project Code I15-560004, East Pasadena Mountain View Land Purchase (2024-2026) (PROPOSED PROJECT)	182
5	13.	Project Code I15-560005, East Pasadena Woodward Tank Replacement (2024-2026) (PROPOSED PROJECT)	183
6	14.	Project Code I15-570002, El Rio Supply (PROPOSED PROJECT)	184
7	15.	Project Code I15-570003, El Rio Pump Station Facility Improvements (PROPOSED PROJECT)	185
8	16.	Project Code I15-570004, El Rio WTP Chlorine Facility Improvements (PROPOSED PROJECT)	186
9	17.	Project Code I15-570005, El Rio Well 2 Nitrate Treatment (PROPOSED PROJECT)	187
10	18.	Project Code I15-570006, El Rio Small Main Replacement Program (PROPOSED PROJECT)	187
11	19.	Project Code I15-570007, El Rio Tank Replacements (PROPOSED PROJECT)	188
12	20.	Project Code I15-570008, El Rio System Looping (PROPOSED PROJECT)	188
13	21.	Project Code I15-800001, Bellflower Main Replacements (2022-2023) (PROPOSED PROJECT)	189
14	22.	Project Code I15-800002, Bellflower Annual Main Replacement Program (2024-2026) (PROPOSED PROJECT)	191
15	D.	Ventura County District Proposed New Projects	192
16	1.	Project Code I15-510053, Ventura Freeway Crossing (PROPOSED PROJECT)	193
17	2.	Project Code I15-510057, VEN-Integrated Water Supply (PROPOSED PROJECT)	194
18	3.	Project Code I15-510058, VEN-Peak Supply Improvement (PROPOSED PROJECT)	195
19	4.	Project Code I15-510059, VEN-Pump Station Replacement and Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	196

1	5.	Project Code I15-510060, VEN-SCADA Maintenance and Improvements Program (2024-2026) (PROPOSED PROJECT).....	198
2	6.	Project Code I15-510061, VEN-Tank Rehabilitation and Seismic Upgrades Program (2024-2026) (PROPOSED PROJECT)	198
3			
4	7.	Project Code I15-510062, VEN-Standby Generator Improvements Program (2024-2026) (PROPOSED PROJECT).....	199
5			
6	E.	Central Division Proposed New Projects.....	200
7	1.	Project Code I15-400130, Carmel Woods #1 and #2 Tank Replacement (PROPOSED PROJECT).....	201
8	2.	Project Code I15-400142, Ralph Lane Interconnect (PROPOSED PROJECT)	202
9			
10	3.	Project Code I15-400153, Eardley-Forest Lake Above Ground Transmission Main Replacement (PROPOSED PROJECT).....	203
11	4.	Project Code I15-400154, BIRP Sound Walls (PROPOSED PROJECT)	203
12			
13	5.	Project Code I15-400155, Carmel Valley Transmission Main Improvements (PROPOSED PROJECT)	204
14	6.	Project Code I15-400156, Los Padres Dam Facilities Improvements (PROPOSED PROJECT)	205
15			
16	7.	Project Code I15-400157, Main Replacement Program (2024-2026) (PROPOSED PROJECT)	205
17	8.	Project Code I15-400158, Fire Protection Program (2024-2026) (PROPOSED PROJECT)	206
18			
19	9.	Project Code I15-400159, Pump Station Rehabilitation Program (2024-2026) (PROPOSED PROJECT).....	207
20	10.	Project Code I15-400160, SCADA Maintenance and Improvements Program (2024-2026) (PROPOSED PROJECT).....	208
21			
22	11.	Project Code I15-400161, Tank Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	209
23	12.	Project Code I15-400162, Well Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	210
24			
25	13.	Project Code I15-400163, Standby Generator Improvement Program (2024-2026) (PROPOSED PROJECT).....	211
26	14.	Project Code I15-400164, Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT).....	212
27			
28	15.	Project Code I15-400165, Tank Installation and Replacement Program (2024-2026) (PROPOSED PROJECT).....	213

1	F.	Sacramento District Proposed New Projects	214
2	1.	Project Code I15-600106, Isleton Tank (PROPOSED PROJECT)	216
3	2.	Project Code I15-600108, Wittkop 2 Water Treatment Plant (PROPOSED PROJECT)	217
4	3.	Project Code I15-600109, Vintage 1 Treatment (PROPOSED PROJECT)	218
5	4.	Project Code I15-600110, Malaga Well Replacement and TCP Treatment (PROPOSED PROJECT)	219
6	5.	Project Code I15-600111, Main Replacement Program (2024-2026) (PROPOSED PROJECT)	219
7	6.	Project Code I15-600112, SCADA Maintenance and Improvements Program (2024-2026) (PROPOSED PROJECT).....	221
8	7.	Project Code I15-600113, Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT).....	222
9	8.	Project Code I15-600114, Well Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	224
10	9.	Project Code I15-600115, Standby Generator Improvements Program (2024-2026) (PROPOSED PROJECT).....	225
11	10.	Project Code I15-600116, Service Saddle Replacement Program (2024-2026) (PROPOSED PROJECT).....	226
12	11.	Project Code I15-660004, Fruitridge Vista -South Highway 99 Crossing (PROPOSED PROJECT)	227
13	12.	Project Code I15-660005, Fruitridge Vista Well Rehabilitation Program (2024-2026) (PROPOSED PROJECT).....	227
14	13.	Project Code I15-660006, Fruitridge Vista Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT)	228
15	14.	Project Code I15-670004, Hillview Area Tank Rehab Program (2024-2026) (PROPOSED PROJECT)	229
16	15.	Project Code I15-670005, Hillview Area Tank Replacement Program (2024-2026) (PROPOSED PROJECT).....	230
17	16.	Project Code I15-670006, Hillview Area Pump Station Rehabilitation Program (2024-2026) (PROPOSED PROJECT)	231
18	17.	Project Code I15-670009, Hillview Area WTP PSPS Power Storage Project (PROPOSED PROJECT)	232
19	18.	Project Code I15-860001, Bass Lake Flat Rate to Metered Conversion (PROPOSED PROJECT)	233

1	G.	Larkfield District Proposed New Projects	233
2	1.	Project Code I15-610024, Larkfield PSPS Power Storage Project (PROPOSED PROJECT)	234
3	2.	Project Code I15-610025, Larkfield Main Replacement Program (2024-2026) (PROPOSED PROJECT).....	235
4	3.	Project Code I15-610026, Larkfield SCADA Improvement Program (2024-2026) (PROPOSED PROJECT).....	236
5	4.	Project Code I15-610027 Larkfield Tank Rehabilitation and Seismic Upgrades 2024-2026) (PROPOSED PROJECT).....	237
6	5.	Project Code I15-610028, Larkfield Well Rehabilitation and Maintenance Program (2024-2026) (PROPOSED PROJECT)	239
7	6.	Project Code I15-610029, Larkfield Generator Projects (PROPOSED PROJECT)	240
8	7.	Project Code I15-610030, Larkfield Water Treatment Upgrades (PROPOSED PROJECT)	240
9			
10	XVI.	PLANNING STUDIES AND SYSTEM MAPS	241
11			
12	A.	Carbon Free Fleet Strategy and Roadmap	241
13	B.	Urban Water Management Plans	241
14	C.	Water Infrastructure Act - Risk Assessments and Emergency Response Plan	242
15	D.	Comprehensive Planning Study	242
16	E.	San Diego Recycled Water Use Study.....	243
17	F.	San Diego Alternative Source of Supply Phase II Study.....	244
18	G.	Ventura Turnout PRV Hydropower Study	245
19	H.	Larkfield Integrated Water Supply (“IWS”).....	245
20	I.	Monterey Tank Seismic Assessment	246
21	J.	System Mapping	246
22	K.	Scope and Budgets.....	247
23	L.	Monterey Wastewater Consolidation.....	248
24			
25	XVII.	TANK MAINTENANCE	258
26			
27			
28			

1 **BEFORE THE PUBLIC UTILITIES COMMISSION**
2 **OF THE STATE OF CALIFORNIA**

3
4 Application of California-American Water
5 Company (U210W) for Authorization to Increase
6 its Revenues for Water Service by \$55,771,300 or
7 18.71% in the year 2024, by \$19,565,300 or
8 5.50% in the year 2025, and by \$19,892,400 or
9 5.30% in the year 2026.

Application 22-07-XXX

10 **DIRECT TESTIMONY OF IAN C. CROOKS**
11 **(FINAL APPLICATION)**

12
13 **I. INTRODUCTION**

14 Q1. Please state your name and business address.

15 A1. My name is Ian C. Crooks. My business address is 655 W. Broadway, Suite 1410, San
16 Diego, CA 92101.

17
18 Q2. By whom are you employed and in what capacity?

19 A2. I have been employed by California-American Water Company (“California American
20 Water” or the “Company”) since August 2013. In November 2016, I began serving as
21 Vice-President of Engineering with responsibility for overseeing the Company’s statewide
22 engineering functions.

23
24 Q3. What are your responsibilities?

25 A3. I oversee the planning, programming, and implementation of the Company’s capital
26 improvement program, and may provide guidance on the planning and budgeting of
27 projects, and oversight of project administration, design, permitting and construction to
28 ensure compliance with budgets, schedules, and regulations. Most recently, I have been

1 heavily involved with our Monterey Peninsula Water Supply Project (“MPWSP”) in our
2 Central Division.

3
4 Q4. Please summarize your educational background.

5 A4. I received a Bachelor of Science degree in Environmental Engineering from Pennsylvania
6 State University in August 1994. I received a Master of Business Administration from
7 Ottawa University in January 2016.

8
9 Q5. Please summarize your employment experience.

10 A5. My career in the water industry began in 1994 as a water treatment plant operator for the
11 City of Harrisburg Water Authority (now Capital Region Water) in Harrisburg,
12 Pennsylvania. Later in 1994, I became the Engineering Supervisor for the Erie City Water
13 Authority in Pennsylvania. In 1996, I joined the City of Coatesville Authority in
14 Pennsylvania as the Operations Engineer with responsibility for water and wastewater
15 capital and operations projects including dams, sources, plants, distribution, and collection.
16 I briefly left the City of Coatesville Authority in 1998 to join Citizens Utilities as a Project
17 Manager before returning to the City of Coatesville Authority in 1999 in the role of Sr.
18 Operations Engineer with the added responsibility of Information Technology Manager. In
19 2001, Pennsylvania-American Water Company acquired the City of Coatesville Authority
20 and I remained with Pennsylvania-American Water Company until 2005 when I joined
21 NVR, Inc., a national homebuilder, as the Land Development Manager. In 2006, I rejoined
22 the American Water Works Company, Inc. (“American Water”) family as a Sr. Project
23 Manager at Arizona-American Water Company, located in Phoenix, Arizona. I served in
24 various roles of increasing responsibility with Arizona-American Water Company,
25 including Engineering Manager, Director of Operations, and Vice President/Director of
26 Engineering for Arizona and New Mexico-American Water Companies. In early 2012,
27 American Water sold its Arizona-American Water Company subsidiary to EPCOR Water
28 USA, where I remained and continued to serve as a Director of Engineering until joining

1 California American Water in August 2013, as Engineering Manager in the Central
2 Division, with responsibilities for the division's capital projects and the MPWSP. In
3 November 2016, I began serving in my current role as Vice-President of Engineering.
4

5 Q6. Have you testified before any regulatory agencies?

6 A6. Yes. I have testified before the California Public Utilities Commission (the "Commission")
7 and the Arizona Corporation Commission.
8

9 Q7. Are you a registered professional engineer?

10 A7. I am a registered professional engineer in Arizona and Pennsylvania.
11

12 **II. PURPOSE AND ORGANIZATION OF TESTIMONY**

13 Q8. What is the purpose and organization of your testimony?

14 A8. My testimony provides to provide an overview, explanation and supporting details for the
15 engineering, planning, and capital investment program statewide and is organized as
16 follows: (Section III) a brief engineering group overview; (Section IV) overview of the
17 capital investment management process; (Section V) background of the infrastructure
18 status and planning process; (Section VI) overview of Developer related activity; (Section
19 VII) explanation of Recurring Project ("RP") capital investments; (Section VIII) overview
20 and explanation of Enterprise Solutions or Technology & Innovation ("T&I"); (Sections IX
21 thru XV) detail support for projects that fall into the following categories: completed,
22 carry-over, perform or planned but not yet adopted, advice letter, memo account, and
23 proposed new capital investment projects; and (Section XVI) details of proposed planning
24 studies.
25

26 **III. CALIFORNIA AMERICAN WATER ENGINEERING GROUP**

27 Q9. Please provide an overview of the California American Water Engineering Group.
28

1 A9. The Engineering Group for California American Water consists of these main functions:
2 (1) Project Delivery and Planning; (2) Capital Administration; and (3) Geographic
3 Information System, Mapping (“GIS”).
4

5 Q10. Please briefly describe the first function in your Engineering Group.

6 A10. The first function is Project Delivery, which includes planning, design, permitting,
7 procurement, and delivery of capital projects on time and within budget. The planning
8 portion is to identify the capital improvements needed across the Company’s operations
9 through the Comprehensive Planning Study (“CPS”) and Condition Based Assessment
10 Study (“CBA”), which provides the primary foundational support for capital projects
11 delivered for California American Water.
12

13 Q11. What is the second function within your Engineering group?

14 A11. The second function is Capital Administration, which has the primary responsibility of
15 coordinating, reporting, and managing the Capital Investment Management Process in
16 California and communicating on a continuous basis the capital budget with California
17 American Water’s management team.
18

19 Q12. What is the third function within your Engineering group?

20 A12. The third function is GIS, a framework for gathering, managing, and analyzing data. It is
21 the spatial repository of all water/wastewater assets owned and operated by California
22 American Water.
23

24 **IV. CAPITAL INVESTMENT MANAGEMENT PROCESS**

25 Q13. What is the next item you will cover in your testimony?

26 A13. I will briefly discuss the Capital Investment Management (“CIM”) Process within
27 California American Water.
28

Q14. Why is California American Water providing this overview?

A14. The primary reason for discussing the CIM Process is to show the internal review typically performed to monitor capital project costs, and to show that information is used to take actions and make any recommended improvements as necessary to manage the total project budget.

Q15. Please describe the CIM Process.

A15. California American Water annually prepares and maintains a five-year Strategic Capital Expenditure Plan (“SCEP”) plan that serves as an integral component of its overall strategic business plan. The five-year capital investment plan is reviewed annually to identify and prioritize necessary capital improvement projects to ensure high-quality water service, resolve operational challenges, comply with regulatory requirements, and formalize and approve the annual budget. An assessment of the completed and carry-over prior year’s projects and capital expenditures is performed and adjustments, if applicable, are made in accordance with the current five-year capital investment plan. The SCEP budget includes Investment Projects (“IP”), Recurring Projects (“RP”), and Developer Funded Projects (“DV”).

Q16. Can you provide a comprehensive SCEP list of the current 4-year SCEP from 2022-2025?

A16. Yes. I have included as Attachment 1 to this testimony California American Water’s current 4-year SCEP program from 2022-2025. Attachment 1 is parsed by number and capital expenditure category (RP, DV, IP), where 15 represents California followed by a – (dash) and then the number.

15-01 – Corporate (Statewide);

Southern Division

15-30 – San Diego County District;

15-50, 56, 57, 80 – Los Angeles County District;

15-51 – Ventura County District;

Central Division

15-40, 48, 49 – Monterey County District;

15-42 - Monterey County Wastewater District;

Northern Division

15-60, 62, 63, 64, 65, 66, 67, 86 – Sacramento District;

15-61 – Larkfield District;

California American Water’s proposed total capital investment from the year 2022 through 2025 represents nearly \$542,000,000. The table below summarizes the total proposed investment over these years, excluding developer related activity and capital related to the MPWSP.

Annual Capital Investment (\$ millions, rounded)				
2022	2023	2024	2025	Total
\$106	\$109	\$156	\$170	\$542

Q17. Are the budgets reflected in the SCEP the same as the project budgets reflected in the workpapers?

A17. No. The costs shown in the SCEP use the project costs in workpapers to develop a fully loaded project cost that adds costs not included in the workpapers for items such as company direct labor, labor burden, overhead, AFUDC (allowance for funds used during construction), and construction contingency. These cost items were added and calculated

1 using methods, assumptions and percentages in the RO Model as described in the Direct
2 Testimony of Bahman Pourtaherian.

3
4 **V. INFRASTRUCTURE STATUS AND PLANNING**

5 Q18. What is the next item you will cover in your testimony?

6 A18. I will discuss Capital Infrastructure Planning.

7
8 Q19. Please provide a general overview of California American Water's investment in capital for
9 water system improvements.

10 A19. California American Water works to make capital investment decisions that effectively and
11 efficiently use financial resources to provide safe, reliable, high-quality service to
12 customers and continue to meet existing and ever-changing regulatory requirements. This
13 requires continuous investment to renew, replace, and/or build new infrastructure. Meeting
14 these goals requires: (1) an ongoing, comprehensive engineering planning program, with
15 the CPS as the primary tool for the evaluation and determination of capital investment
16 needs; (2) preparation of capital budgets properly aligned with business plan objectives;
17 and (3) effective technical, functional, and financial oversight of the capital project delivery
18 program of California American Water.

19
20 Q20. How important is planning in California American Water's capital investment program?

21 A20. California American Water adopts American Water's Comprehensive Planning Program
22 and other comparable technical analyses as the primary driver for identifying specific
23 capital project needs. These project recommendations are aligned with American Water's
24 Asset Investment Strategy and include input from all appropriate functional areas.
25 Between planning study cycles (typically 3 to 6 years), new projects may arise, particularly
26 due to regulations and acquisitions. In addition, certain types of projects cannot be
27 identified via a typical engineering analysis, yet they still must be evaluated and prioritized.
28 At this time, all of California American Water's water systems have had a CPS completed

1 in 2018 or 2019, and newly acquired systems, including El Rio, East Pasadena, Hillview,
2 and Fruitridge, have CPSs completed in 2022. The majority of the new capital
3 improvement projects identified in this statewide GRC have their foundation from the work
4 performed in the CPSs or from additional studies identified in the CPSs.

5
6 Q21. Please provide some general perspective relating to California American Water's goals
7 with respect to water infrastructure improvements to its various operations across
8 California.

9 A21. One of California American Water's principles is to provide safe, adequate, and reliable
10 water service to our customers. California American Water's capital improvement plans
11 are based on delivering capital investment projects to maintain and improve the overall
12 reliability of the water systems. Examples of maintaining and improving our water systems
13 include the replacement of aging water mains, well rehabilitation, redrilling, and
14 replacement programs, booster station rehabilitation programs, tank rehabilitation
15 programs, and upgrades to water treatment facilities. We incorporate technology upgrades,
16 efficiency improvements, and resilience, redundancy, and hardening improvements in all
17 service areas. Additionally, California American Water invests capital to address emerging
18 issues related to environmental issues, water quality, groundwater contaminants, health and
19 safety regulations, climate variability, drought, seismic events, and wildfires. In terms of
20 groundwater contaminants, perfluorooctanoic acid ("PFOA"), 1,4-dioxane, and hexavalent
21 chromium ("chromium VI") are currently impacting groundwater wells and will need to be
22 addressed with treatment systems to meet water quality standards. The Larkfield,
23 Monterey, and Ventura systems have experienced wildfires that caused damage to
24 facilities, interruptions in service and in Larkfield required significant costs to repair
25 infrastructure. In 2017, the Garrapata system in the Central Division experienced a
26 landslide adjacent to the Company's storage tanks during a severe wet weather storm event,
27 requiring the Company to develop and implement temporary measures while design and
28

1 permitting work took place for construction of an engineered retaining wall that was
2 completed in February of 2022. Pictures of damage and repair/restoration are shown below.

3
4 Damage Picture

Repair Picture #1

Repair Picture #2



14
15
16 Q22. Please expand upon the actions California American Water has taken towards the
17 evaluation and resilience of infrastructure due to climate variability, wildfires, severe
18 weather.

19 A22. California American Water completed a High-Risk Asset Management analysis in 2021,
20 which evaluated assets for consequences of damage and failure and probabilities of
21 occurrence to determine an overall risk score. For those facilities that were ranked high,
22 mitigation and improvement measures were developed to address the risk. Additionally, in
23 2021, in compliance with America's Water Infrastructure Act ("WIA") of 2018, California
24 American Water completed risk and resilience studies. WIA is a United States federal law
25 that requires water systems with greater than 3,300 customers to prepare a risk and
26 resiliency assessment ("RRA") and emergency response plan to evaluate the needs for
27 enhancing and improving the resilience management for each water system. Furthermore,
28 California American Water has completed an assessment of the wildfire risk to assets in

1 areas identified by Cal Fire as being in high wildfire risk zones. Critical and vulnerable
2 assets were identified, and emergency and protection plans have been completed. These
3 plans will continually be assessed and adjusted as needed. All three of the studies
4 mentioned above are fluid and will be used by California American Water as tools to
5 continually evaluate infrastructure to improve and protect facilities and update response
6 plans to ensure safe and reliable water supply to customers.

7
8 California American Water recognizes the need to diversify supply sources to be prepared
9 for drought conditions and other external factors. In the Monterey County District, we have
10 an aquifer storage and recovery system that allows for storage of purified recycled water
11 through the Pure Water Monterey project. Additionally, the Company understands that
12 desalinated seawater is a true drought resistant source of supply and have been working for
13 many years to implement a desalination project in Monterey as a long-term water supply
14 solution. In the Company's West Placer service area, we completed a supply study to
15 determine the most reliable water sources for serving new growth besides traditional
16 groundwater sources. Finally, we are completing supply studies in our San Diego County
17 and Ventura County Districts to improve supply resilience.

18
19 Backup power is vital to continued water service in the case of severe weather and
20 wildfires, and we install generators to maintain power to critical facilities in these
21 situations. We are completing a generator study to assist in determining the facilities that
22 require generators to continue to serve our customers in these extreme events. Generator
23 installation projects are included in this application.

24
25 A seismic evaluation study is being completed to examine the geotechnical, condition-
26 based, structural, and hydraulic analyses of our storage tanks to determine operational and
27 capital improvement projects to assist in protecting our water storage. Projects to address
28 these improvement recommendations are included in this application.

1 In conclusion, California American Water utilizes these engineering research, studies, and
2 analysis to inform system improvements and additions to ensure safe and reliable high-
3 quality. This level of analysis is responsive to both the external environment and internal
4 policies as well as the Commission's focus on safety, reliability, and risk mitigation.

5
6 Q23. Please provide a general assessment of California American Water's compliance with the
7 Commission's General Order 103-A?

8 A23. California American Water systems are in general conformance with General Order
9 ("GO") 103-A and with the prior complete improvements and new proposed improvements
10 to infrastructure will continue to ensure any deficiencies are rectified.

11
12 Q24. Are there California American Water systems where general conformance with GO 103-A
13 is of concern?

14 A24. There are three systems where a supply deficit may present challenges: the Duarte and East
15 Pasadena systems in Los Angeles County District, and the Monterey Main system in the
16 Central Division.

17
18 The Duarte system in the Los Angeles County District was identified as having a supply
19 deficit. Capital improvement projects have been identified to remedy this situation,
20 including the need to bring the Santa Fe Well back online, Crownhaven Well
21 Improvements, bringing the new Live Oak Well online, and installation of a new well at the
22 Crestfield property. The details of these projects are discussed later in my testimony. The
23 2019 CPS conducted for all the districts of California American Water a source of supply
24 adequacy evaluation, which in turn resulted in identification of capital projects to ensure
25 adequate source of supply is available to provide reliable water service to customers.

26
27 The East Pasadena system in the Los Angeles County District was recently identified as
28 having a State Water Resources Control Board ("SWRCB") calculated maximum day

supply deficit under the condition of one well being out of service during a maximum demand period. However, we have been and are currently meeting maximum day demands with both wells running and a water supply interconnect agreement with the City of Arcadia. Because we do not meet the SWRCB calculated maximum day demand supply, it is critical to install treatment at Well 8 and bring it back online in order satisfy this calculated requirement. The 2022 East Pasadena Comprehensive Planning Study identified a project to install Granular Activated Carbon (“GAC”) treatment at Well 8, which has been out of service since 2020 due water quality issues. Once Well 8 is brought back into service with treatment, the calculated maximum day supply deficit is expected to be resolved.

Finally, the Monterey main system may experience a deficit in the quantity of water available to serve existing customers during the rate case period. This system’s water supply challenges are well-documented in prior Commission proceedings and decisions, and most recently in the Company’s A.21-11-024 to the Commission, which relates to the Amended and Restated Water Purchase Agreement for water supplies from the Pure Water Monterey Expansion Project. The Monterey Main system is currently subject to a moratorium on new and expanded service connections as authorized by the Commission in D.11-03-048. The moratorium is expected to remain in effect until California American Water’s MPWSP desalination project (approved in D.18-09-017 as modified in D.19-01-051) is in-service and producing sufficient and reliable water supplies to meet current demand and projected long-term future demand.

VI. DEVELOPER AND CONTRIBUTED PROJECTS – ALL DISTRICTS

Q25. Please describe the nature and composition of the developer and contributed projects.

A25. The various tasks included in these types of projects are funded entirely by non-company funds. The tasks are mostly unscheduled. California American Water typically has a good understanding of the growth areas in our various districts and tracks projected growth

1 through internal analyses and information and studies from outside agencies and
2 governments. However, the timing of when these projects are expected to occur is still
3 uncertain until a developer comes into our offices with a set of plans and with all the
4 necessary development approvals. Even then, economic and other events may still impact
5 the timing and viability of such projects.

6
7 Q26. Please describe the proposed new developer and contributed projects.

8 A26. California American Water typically develops the estimated costs for these projects based
9 on documented and anticipated growth, developers' inquiries, economic conditions, and
10 historical information. All districts except one are continuing to experience slower or
11 moderate growth than in previous years and California American Water expects this slow
12 growth to remain consistent into the foreseeable future. However, the Sacramento District,
13 specifically its West Placer service area, has been experiencing a resurgence in developer
14 activity. California American Water expects to add a significant number of new customers
15 over the next several years in that area. In summary, California American Water develops
16 an estimate of the anticipated annual contributions for the next GRC period based on
17 average growth and known forecasted development.

18
19 **VII. RECURRING PROJECTS**

20 Q27. Please describe the nature and composition of the RP capital expenditure category.

21 A27. The RP capital expenditures are routine capital expenditures that are necessary to ensure
22 operation of a reliable water system. These types of capital expenditures are usually
23 comprised of short sections of distribution mains, valves, hydrants, service lines, meters,
24 small pumps and motors, and other items considered general equipment. The annual level
25 of expenditures for each of the individual recurring capital expenditure items discussed in
26 my testimony may vary from year-to-year based on need or unanticipated emergencies.

27
28 Q28. How does California American Water typically budget the RP?

1 A28. Since the RP are primarily for smaller unforeseen operational capital investment tasks and
2 routine every year-type of projects, they are budgeted by taking into consideration the
3 inflation adjusted five-year historical average of the specific RP. The RP are divided into
4 various sub accounts, and they are briefly summarized in my testimony below.

5
6 Q29. Is California American Water requesting any changes to the way it administers the RP
7 category budgets?

8 A29. No. Instead, California American Water acknowledges that its methods continue to be
9 consistent with the Settlement Agreement adopted in California American Water's 2010
10 statewide GRC (D.12-06-016), whereby the Commission recognized the value of flexibility
11 to allocate the total RP budget within each district among specific different RPs as needed.
12 For example, on page 148 of the Settlement Agreement, it states "DRA also agrees to allow
13 California American Water discretion to manage the overall adopted bottom-line recurring
14 project budget, with flexibility to allocate different spending levels to specific recurring
15 project line items during this GRC period (2012-2014)." California American Water has
16 been using and is continuing to use this approach for this current GRC time period (2021-
17 2023).

18
19 Q30. Please provide a description for each of the RP sub-categories of expenditures.

20 A30. For purposes of the following the RP category descriptions below in my testimony, I have
21 used the generic district designation of "R15-xx." The R15 represents California and
22 where xx would be a two-digit code representing the districts as described earlier in my
23 testimony.

24
25 **A. Project Code R15-xxA1 – Mains – New.**

26 California American Water uses this RP for both scheduled and unscheduled tasks
27 involving installation of short lengths of main between dead-end mains in side streets and
28 installation of short new segments of main for certain road relocation projects. The tasks

1 include new water mains, including valves and other appurtenances necessary to install the
2 mains (e.g., casing pipes and joint restraints) funded by California American Water.

3
4 **B. Project Code R15-xxB1 – Mains – Replacement/Renewal.**

5 California American Water uses this RP for scheduled tasks that it funds itself. These tasks
6 involve replacement, renewal, or improvement of existing water mains, including valves
7 and other appurtenances necessary to perform the work (e.g., reconnection of existing
8 service lines and hydrant assemblies, joint restraint, etc.).

9
10 **C. Project Code R15-xxC1 – Mains – Unscheduled.**

11 California American Water uses this RP for unscheduled emergency main replacement
12 tasks funded by California American Water. These tasks involve installation of one foot or
13 more of main where main breaks have occurred or been reported and installation of short
14 new segments of main will be required to fix the break. These tasks include installation of
15 new water mains, including valves and other appurtenances necessary to install the mains
16 (e.g., casing pipes and joint restraints) funded by California American Water.

17
18 **D. Project Code R15-xxD1 – Mains – Relocated.**

19 California American Water uses this RP for unscheduled emergency or scheduled main
20 relocation tasks that it funds itself. Typical tasks will involve relocation of mains in
21 existing streets where city or external consultants request main relocation usually resulting
22 from new construction or upsizing of other street utilities.

23
24 **E. Project Code R15-xxE1 – Hydrants and Valves– New.**

25 California American Water uses this RP for scheduled and unscheduled new hydrant and
26 valve installation tasks funded by California American Water. Typical tasks include any
27 new hydrant and valve installations that California American Water funds.

F. Project Code R15-xxF1 – Hydrants and Valves – Replacements.

California American Water uses this RP for scheduled and unscheduled hydrant and valve replacement tasks funded by California American Water. Typical tasks involve replacement of leaking, failed, or obsolete hydrant assemblies (including the hydrant lateral and valve) that California American Water funds as well as rehabilitating and upgrading existing valve vaults that pose a safety hazard to employees accessing valves.

G. Project Code R15-xxG1 – Services – New.

California American Water uses this RP for scheduled and unscheduled new service line installation tasks funded by California American Water. Typical activities associated with new services include installation of service saddles, service lines, corporation stops, curb stops and meters for California American Water customers where there was no service line before.

H. Project Code R15-xxH1 – Services – Replacement.

California American Water uses this RP for scheduled and emergency replacement service line installation tasks funded by California American Water. Typical tasks involve the replacement of existing service lines from the water main to the meter, including replacement of service line corporation stops or shut-off valves for water, if California American Water owns the facilities.

I. Project Code R15-xxI1 – Meters – New.

California American Water uses this RP for scheduled and unscheduled new meter installation tasks funded by California American Water. Typical tasks involve purchasing and installing all new customer meter installations including yokes, meters, and meter readout devices, including meters on fire services.

J. Project Code R15-xxJ1 – Meters – Replacement.

California American Water uses this RP for scheduled and unscheduled meter replacement tasks funded by California American Water. Typical tasks include replacement or improvement of existing customer metering.

K. Project Code R15-xxK1 – ITS Equipment and Systems.

California American Water uses this RP for costs related to the purchase of personal computers, printers, plotters, scanners, peripherals, networks, software, servers, and associated equipment.

L. Project Code R15-xxL1 – SCADA.

California American Water uses this RP for scheduled and unscheduled tasks associated with the replacement and upgrade of the SCADA system. The SCADA system monitors and controls the production, treatment, distribution, and storage facilities within the various operating districts of California American Water.

M. Project Code R15-xxM1 –Security.

California American Water uses this RP for scheduled and unscheduled tasks associated with the replacement and upgrade of the security systems. Installation of these improvements is a result of ongoing evaluation of potential threats to the water facilities located within the various operating districts of California American Water.

N. Project Code R15-xxN1 –Offices and Operations Center.

California American Water uses this RP for scheduled and unscheduled tasks involving the replacement or improvement of building systems, equipment, or purchase of furnishings, copy machines, fax machines and other related equipment for the offices and operations centers.

O. Project Code R15-xxP1 –Tools and Equipment.

California American Water uses this RP for scheduled and unscheduled purchases of new or replacement tools and equipment. These tools and equipment are needed for the operations conducted at the construction sites, fabrication shops, laboratories, storerooms (material delivery, shipping, and storage) and meter reading benches.

P. Project Code R15-xxQ1 –Plant – Replacements/Additions.

California American Water uses this RP for scheduled and unscheduled tasks related to the plant replacements or additions funded by California American Water. Typical plant facilities covered under this RP are: (a) water supply; (b) water treatment; (c) water pumping; (d) water storage; and (e) water pressure regulation facilities including the associated building components and equipment.

Q. Project Code R15-xxR1 –Tank Réhabilitation.

California American Water uses this RP for scheduled and unscheduled tasks related to tank rehabilitation work funded by California American Water. Tasks performed under this RP include tank rehabilitation and routine restoration of the tank components. This RP consists of planned tank rehabilitation activities to maintain the condition and extend the useful life of the over 170 water storage tanks California American Water currently utilizes. These tanks require periodic repairs and reapplication of protective coatings to prevent irreversible deterioration of the tanks. California American Water engages American Water’s tank maintenance consultant, Tank Industry Consultants (“TIC”), to assist and support California American Water in maintaining an effective maintenance program to protect and extend the life of the tank investments across the State. Based on the materials of construction and the coatings currently in place, TIC estimates that the tank rehabilitation cycle frequency should be 15 years. Finally, it should be recognized that the two funding sources (deferred expense and capital) must be synchronized by tank project; basically, one cannot be done without the other.

Q31. What are the proposed expenditure levels for these RPs for implementation during the upcoming GRC time period of 2024-2026?

A31. The Proposed New RPs are for those projects being submitted for review and consideration by the Commission for adoption in the GRC period of 2024-2026. The budgets proposed for each of the proposed New RP are shown for all districts in the various tables included as Attachment 1 to my testimony. It is important to recognize the budgets reflected in Attachment 1 are direct costs for the individual RP, and they will not match the total cost generated by the Results of Operations model. The reason for this difference is the Results of Operations model calculates separately the appropriate factors for engineering overhead and contingency, as appropriate.

The table below summarizes the statewide estimated expenditures by year.

California Proposed Recurring Projects

Project	Description	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
A	Mains - New	\$0	\$0	\$0	\$0
B	Mains - Replaced / Restored	\$0	\$0	\$0	\$0
C	Mains - Unscheduled	\$9,239,268	\$3,258,870	\$2,945,498	\$3,033,900
D	Mains - Relocated	\$398,694	\$119,618	\$137,476	\$141,600
E	Hydrants, Valves, and Manholes – New	\$73,302	\$23,827	\$24,375	\$25,100
F	Hydrants, Valves, and Manholes – Replaced	\$5,324,275	\$1,719,986	\$1,775,489	\$1,828,800
G	Services and Laterals - New	\$54,783	\$17,750	\$18,233	\$18,800
H	Services and Laterals - Replaced	\$23,505,890	\$7,867,753	\$7,703,537	\$7,934,600
I	Meters - New	\$582,678	\$185,986	\$195,392	\$201,300

Project	Description	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
J	Meters - Replaced	\$27,257,256	\$8,228,680	\$9,373,676	\$9,654,900
K	ITS Equipment and Systems	\$2,792,281	\$781,373	\$990,608	\$1,020,300
K3	Enterprise Solutions	\$10,711,643	\$3,570,548	\$3,570,548	\$3,570,548
L	SCADA Equipment and Systems	\$485,840	\$150,969	\$164,971	\$169,900
M	Security Equipment and Systems	\$1,592,690	\$508,086	\$534,304	\$550,300
N	Offices and Operations Centers	\$1,406,070	\$448,856	\$471,514	\$485,700
O	Vehicles	\$1,765,585	\$405,793	\$864,792	\$495,000
P	Tools and Equipment	\$747,940	\$238,078	\$251,162	\$258,700
Q	Process Plant Facilities and Equipment	\$11,066,307	\$3,509,427	\$3,722,580	\$3,838,300
R	Capitalized Tank Rehabilitation / Painting	\$1,559,678	\$496,799	\$523,579	\$539,300
	Total	\$98,564,180	\$31,533,399	\$33,267,734	\$33,763,048

VIII. ENTERPRISE SOLUTIONS PROJECTS

Q32. Please describe in greater detail the Enterprise Solutions projects referenced above.

A32. The Enterprise Solutions projects include hardware, software, and related appurtenances that provide the core T&I systems infrastructure across all of the American Water enterprise for use by the Service Company and all American Water regulated subsidiaries, including California American Water. Included as Attachment 2 of my Direct Testimony is a summary schedule identifying the projects included within “Enterprise Solutions,” including the total project costs forecasted through 2026.

1 Q33. Please provide a brief description of some of the projects included within Enterprise
2 Solutions.

3 A33. Enterprise solutions includes projects, such as MapCall, the Company's Meter Data
4 Management System, and Work 1 View.

5
6 MapCall is used to manage maintenance orders and regulatory Occupational Safety and
7 Health Administration ("OSHA") and some environmental requirements, such as incidents,
8 training, and environmental permits. It enables operations production employees, field
9 operations employees, and contractors to complete the lifecycle of work orders and assets
10 in the field. It is a "single pane of glass" for operational needs including maintenance and
11 Health & Safety.

12
13 The Meter Data Management System provides the Company with a means to efficiently
14 collect, organize, analyze, and communicate large quantities of meter data. The system
15 provides access to customers of near real-time water usage data to allow them to identify
16 opportunities for conservation, as well as bill reducing tips to enable smart water use. Data
17 can also be used to uncover irregularities that may signal a leak, meter tampering, or water
18 theft. The system also enables the communication of high use water alerts and continuous
19 flow alerts.

20
21 Work 1 View provides comprehensive and easily accessible information to employees. It is
22 a work execution and data capture system that automates the gathering of key asset
23 management and workforce operational data related to short-cycle work. A planned
24 enhancement is expected to reduce reliance on manual intervention by enabling self-serve
25 work planning.

26
27 **IX. CAPITAL INVESTMENT PROJECTS**

28 Q34. What will your testimony cover regarding California American Water's IP?

A34. The IP are capital improvement projects included in the five-year investment plan for California American Water's various operating districts plus recently completed projects. These improvements are related to the service areas' respective offices, source of supply facilities, booster stations, distribution storage tanks, and transmission/distribution main piping network. These capital improvements are required to comply with the state and federal regulations and to ensure that continuous, safe, adequate, and reliable water utility service is maintained for California American Water's customers. Please refer to the capital project Work Papers for additional information supporting the requested expenditure amounts for each district of California American Water.

Q35. Please explain the various IP categories.

A35. The IP in my testimony are separated into the following categories:

- Completed Capital Investment Projects
- Carry-Over and Ongoing Capital Investment Projects Adopted in prior GRCs;
- Performed or planned, but not yet adopted Capital Improvement Projects;
- Advice Letter Capital Investment Projects;
- Memo Account Capital Investment Projects; and
- Proposed New Capital Investment Projects.

X. COMPLETED CAPITAL INVESTMENT PROJECTS

The table below summarizes the statewide Completed Capital Investment Projects.

Completed Investment Projects

Project	Description	Start/Finish	Total Project
I15-300010-01	SD-Replace 52,000 Ft of 16" Main- The Strand, Phase 1 Imperial Beach	2017-2021	\$8,452,440

Project	Description	Start/Finish	Total Project
I15-300015	SD-Replace 500 Ft of 20" Main-Palm Ave	2019-2020	\$1,249,142
I15-300017	SD-Small Main Repl Program 2018-2020	2019-2021	\$1,615,375
I15-300024-01	SD-Main Replacement Program 2021-2023 - Glorietta Blvd Main Replacement	2021-2021	\$1,077,205
I15-500020	LA-Spinks Reservoir Booster Improv	2017-2020	\$1,029,940
I15-500021	LA-Rosemead Tank Reconstruction	2014-2021	\$4,283,502
I15-500037	LA-Combine Domestic/Irrigation System	2016-2021	\$3,564,284
I15-500038	LA-Booster Station Upgrades	2017-2021	\$4,623,551
I15-500041	LA-Upgrade SCADA System	2019-2021	\$1,420,947
I15-500057	LA-Annual Main Replacement Program (2018-2020)	2019-2021	\$6,985,401
I15-500062	LA-Mission View Well 2 Treatment	2017-2019	\$2,202,831
I15-510026	VEN-Replace Los Robles Booster Station	2016-2021	\$1,587,581
I15-510027	VEN-Upgrade Mayfield Booster Station	2016-2021	\$1,511,937
I15-510031	VEN-Upgrade Wildwood Hydro Booster Station	2017-2021	\$1,272,847
I15-510037	VEN-Tank Rehab 2015-17	2015-2019	\$188,174
I15-400096	MRY-SCADA Upgrade Program (2018- 2020)	2016-2021	\$1,464,052
I15-400097-01	MRY-Interconnect RR, HH, Bishop - Phase 1 Ryan Ranch-Bishop	2018-2021	\$3,072,538
I15-400106	MRY-New Well Development Program	2017-2021	\$96,985
I15-400108-01	MRY-Standby Power/Emergency Generators - Phase 1	2020-2021	\$847,697
I15-400113	MRY-Replace Carola #1 Tank	2018-2020	\$232,232
I15-400114	MRY-Replace Chualar Tank #1	2018-2020	\$655,861

Project	Description	Start/Finish	Total Project
I15-400118	MRY-Valve and PRV Replc Program (2018-2020)	2018-2021	\$1,177,735
I15-400119	MRY-Fire Flow Improv Program (2018-2020)	2018-2020	\$1,014,591
I15-400120	MRY-Booster Station Rehab Program (2018-2020)	2018-2021	\$1,098,334
I15-400121	MRY-Main Replacement Program (2018-2020)	2018-2021	\$5,560,372
I15-400123	MRY-Well Rehabilitation Program (2018-2020)	2018-2020	\$3,146,904
I15-400124	MRY-Huckleberry Hydropneumatic Tank Replacement	2018-2022	\$824,801
I15-400125-01	MRY-Main Replacement Program 2021-2023 - Echo Ave	2021-2021	\$362,297
I15-400125-02	MRY-Main Replacement Program 2021-2023 - Lighthouse Ave	2021-2021	\$858,479
I15-400125-03	MRY-Main Replacement Program 2021-2023 - Kimball Ave	2021-2022	\$665,606
I15-400125-07	MRY-Main Replacement Program 2021-2023 - Del Monte Ave	2021-2022	\$225,389
I15-400129-05	MRY-Tank Rehabilitation Program 2021-2023 - Ranchitos #1	2018-2021	\$627,895
I15-400129-06	MRY-Tank Rehabilitation Program 2021-2023 - Hilby 1	2020-2021	\$328,743
I15-400129-07	MRY-Tank Rehabilitation Program 2021-2023 - Hilby 2	2020-2021	\$450,405
I15-400131	MRY-Well Rehabilitation Program 2021-2023 - Year 2021	2021-2021	\$419,922
I15-400149-01	MRY-CRRDR Property Rockfall Safety Project - Phase I	2020-2021	\$575,127
I15-400149-02	MRY-CRRDR Property Rockfall Safety Project - Phase II 2020 CEMA	2020-2021	\$370,914
I15-400151	MRY-LPD Siphon/Fish Trap Improvements	2020-2021	\$810,429
I15-420005	MWW-Las Palmas Chlorine Contact Basin	2021-2021	\$205,627
I15-480010	TOR-Booster Station Replacement	2018-2021	\$170,791
I15-490001	GAR-Garrapata Slide Recovery	2018-2022	\$2,074,744

Project	Description	Start/Finish	Total Project
I15-600032	SAC-Walerga Rd Bridge Pipe Relocation	2018-2020	\$1,255,314
I15-600051	SAC-Arden Intertie	2010-2020	\$2,999,019
I15-600067	SAC-Isleton Distribution System Improvement	2015-2020	\$953,327
I15-600068	SAC-SCADA Maintenance Program (2018-2020)	2018-2020	\$3,306,205
I15-600071	SAC-Sacramento Well Rehabilitation (2018-2020)	2017-2020	\$9,143,200
I15-600072	SAC-Sacramento Main Improvement Program (2018-2020)	2019-2021	\$6,193,850
I15-600083	SAC-Backyard Mains Replacement Program (2018-2020)	2019-2022	\$874,377
I15-610023	LRK-Larkfield Wildfire Water System Recovery - Meters and Services	2017-2022	\$7,389,845
I15-620002	DWW-Dunnigan Wastewater System Improvements	2017-2020	\$2,937,451
I15-650001	MEA-Meadowbrook Hydropneumatic Tanks and Electrical Upgrades	2019-2021	\$1,391,386
	Total		\$104,847,600

SD - San Diego

LA - Los Angeles

VEN - Ventura

MRY - Monterey Water

MWW - Monterey Wastewater

TOR - Toro

GAR - Garrapata

SAC - Sacramento

LRK - Larkfield

DWW - Dunnigan Wastewater

MEA - Meadowbrook

A. San Diego County District Completed Projects

1. Project Code I15-300010-01 SD-Replace 52,000 Ft of 16" Main- The Strand, Phase 1 Imperial Beach (PORTION COMPLETED)

Q36. Please describe.

A36. Portions of this project are completed, in-service, and used and useful. Please see Section XI, Carry-Over Capital Investment Projects, Project Code I15-300010 for more information regarding portions completed and the continuing portions of the project.

1 **2. Project Code I15-300015, SD- Replace 500 Ft of 20” Main in Palm**
2 **Avenue (COMPLETED)**

3 Q37. Please describe.

4 A37. The paving moratorium was lifted by the City of Imperial Beach in 2018 and this main
5 replacement project began construction in January 2019. The new main was placed in
6 service in April 2019 and the project was completed in April 2020 including the final
7 pavement restoration per the City of Imperial Beach’s requirements. The final costs of the
8 project were more than the previously approved amount due to additional paving
9 requirements from the City of Imperial Beach, excavation, two emergency main leaks that
10 occurred during construction of the project, installation of services, and an extra 395 feet of
11 water main was installed due to the existing water main’s poor condition. This project
12 renewed an existing water main with a long history of main breaks providing reliability to
13 the distribution system.

14
15 **3. Project Code I15-300017, SD-Small Main Replacement Program**
16 **(COMPLETED)**

17 Q38. Please describe.

18 A38. This small main replacement program consisted of two water main projects located in the
19 City of Imperial Beach. In January 2020, the main replacement project on 12th Street was
20 completed. In June 2020, the construction on the second main replacement located on 8th
21 Street was completed. Both projects replaced existing 4-inch AC main with 8-inch C900
22 PVC pipe.

23
24 **4. Project Code I15-300024-01, SD-Main Replacement Program 2021-**
25 **2023, subproject: Glorietta Blvd Main Replacement (PORTION**
26 **COMPLETED)**

27 Q39. Please describe.

A39. Portions of this project are completed, in-service, and used and useful. Please see Section XI, Carry-Over Capital Investment Projects, Project Code I15-300024 for more information regarding portions completed and the continuing portions of the project.

B. Los Angeles County District Completed Projects

1. Project Code I15-500020, LA-Spinks Reservoir Booster Station Improvements (COMPLETED)

Q40. Please describe.

A40. This project was completed in November 2020 and addressed hydraulic inefficiencies in the Spinks gradient in the Duarte service area of the Los Angeles County District. The project included upgrades to the Scott Reservoir booster pump station and Spinks Altitude valve. The improvements to the Scott booster pump station create a better equalization between the zones.

2. Project Code I15-500021, LA-Rosemead Reservoir Reconstruction (COMPLETED)

Q41. Please describe.

A41. This capital investment project included the replacement of the existing Rosemead Reservoir and booster station, which serves California American Water's San Marino service area. Construction of the reservoir was completed in 2017. The Rosemead Booster Station started construction in 2020 and was placed in service in late 2021. The bids were higher than estimated and the existing tank had asbestos that needed to be disposed of properly.

3. Project Code I15-500037, LA-Combine Domestic/Irrigation System in Duarte (COMPLETED)

Q42. Please describe.

1 A42. This project retired the irrigation system located in the Duarte service area and transferred
2 irrigation customers to the domestic system, which was completed in 2019. The irrigation
3 transfer project has already resulted in the transfer of all the customers, the abandonment of
4 thousands of feet of old pipeline, the demolition of a hydropneumatic station, the
5 installation of over 1,400 feet of new main, and the removal of backyard mains. The
6 construction of Bradbury pressure regulating station (“PRS”) and Lemon Domestic BPS
7 were also completed in 2021. The Lemon Booster Pump Station is complete and in service
8 since May of 2021 along with the new Deodar & Furlong PRS. The new PRS is an
9 example of implementing engineering controls to reduce risks employees are exposed to, as
10 it replaces a PRS that posed a confined space hazard. The PRS also increases the reliability
11 of the Spinks Reduced Zone, which has the most irrigation demand. Demolition of the
12 Woodlyn Booster station also was completed.

13
14 **4. Project Code I15-500038, LA-Booster Station Upgrades (2018-2020)**
15 **(COMPLETED)**

16 Q43. Please describe.

17 A43. This completed project included three booster pump replacement projects including Garth
18 Booster Pump Station, Scott Booster Pump Station, and Lamanda Booster Pump Station. In
19 addition to the completed pump stations two other pump station designs began under this
20 program including Oak Knoll Booster Pump Station replacement and Mount Vernon
21 Booster Pump Station replacement. The Booster Station Upgrades rehabilitation program
22 continues under I15-500069, the LA-Pump Station and PRV Rehabilitation Program (2021-
23 2023).

24
25 **5. Project Code I15-500041, LA-Upgrade SCADA System**
26 **(COMPLETED)**

27 Q44. Please describe.
28

1 A44. This capital project was completed in December 2021. This IP project upgraded forty-
2 seven (47) remote sites with new Allen Bradley Programmable Logic Controllers
3 (“PLCs”), hardware and associated equipment. The PLCs are industrial computers used to
4 control electric-mechanical processes. These remote sites are located at wells, booster
5 pump stations, tank, and pressure reducing valve (“PRV”) sites throughout the Los Angeles
6 County District. GE Booth and Lyden electric worked together to convert all these sites
7 over from the previous Bristol brand PLC with new Allen Bradley brand PLCs. This
8 project included programming, electrical installation, and computer software upgrades.
9

10 **6. Project Code I15-500057, LA-Annual Main Replacement Program**
11 **(2018-2020) (COMPLETED)**

12 Q45. Please describe.

13 A45. This capital project was completed in September 2021. The project replaced a total of
14 16,806 feet of water mains in the Duarte system within the Los Angeles County District.
15 The project started with design in early 2019, followed by construction in 2019-2021. This
16 project replaced 4, 10, and 12-inch diameter pipes of primarily steel water mains located on
17 Woodlyn Ln., Bradbury Hills Rd., Encanto Parkway, Fish Canyon Rd., Royal Oaks Dr.,
18 Miltonwood Ave., Chimes Ave., Atlin St., Baylor St., and Chesson St. This project
19 addressed the findings and recommendations of the 2012 CBA of buried infrastructure that
20 identified approximately 27 miles (~143,000 feet) of water mains in need of replacement in
21 the Duarte system. The Duarte system includes a total of approximately 100 miles of
22 pipeline.
23

24 **7. Project Code I15-500062, LA-Mission View Well 2 Treatment**
25 **(COMPLETED)**

26 Q46. Please describe.

27 A46. The project was to blend the existing Mariposa Well water with the water from Mission
28 View Well 2 in the San Marino service area. The Mission View Well 2 was out of service

1 due to nitrate levels in the water greater than the MCL. Construction was completed in
2 August 2019. The blending line went into service in March 2020. This blending is to
3 achieve nitrate levels in the water entering the distribution system below the MCL. Nitrate
4 analyzers were added which monitors compliance in the SCADA system.

5
6 **C. Ventura County District Completed Projects**

7 **1. Project Code I15-510026, VEN-Replace Los Robles Booster Station**
8 **(COMPLETED)**

9 Q47. Please describe.

10 A47. The Los Robles Booster Station was completed in December 2018. Design delays were
11 attributed to coordination efforts with the City of Thousand Oaks for an adjacent
12 improvement project. The Los Robles BPS above-grade site improvements were integrated
13 with City of Thousand Oaks-owned parking lot improvements that lead to a recreational
14 open space area and trail. The project scope included full replacement of the existing
15 booster pump station with a new below-grade prefabricated booster pump station and new
16 electrical equipment with two 800-gpm pumps to match the capacity of the existing pump
17 station.

18
19 **2. Project Code I15-510027, VEN-Upgrade Mayfield Booster Station**
20 **(COMPLETED)**

21 Q48. Please describe.

22 A48. Design for this booster station project was completed in December 2019, and the upgraded
23 pump station was completed, placed in-service, and used and useful in December 2021.
24 The project scope included full replacement of the existing booster pump station with a
25 new below-grade prefabricated booster pump station and new electrical equipment with
26 three 60-gpm domestic pumps and one 1,000-gpm fire pump. The increased costs can be
27 attributed to delays in construction to confirm the location of the Southern California
28

Edison buried electrical utilities, relocation of a fire hydrant at the existing site, and permanent emergency generator design.

3. Project Code I15-510031, VEN-Upgrade Wildwood Hydro Booster Station (COMPLETED)

Q49. Please describe.

A49. The upgrade of the Wildwood Hydro Booster Station began in late 2017. The design was completed in October 2019 and project construction documents were released to bidders. Construction bids were received in December 2019 and were significantly higher than the engineer's construction cost estimate. Construction began in August 2020 and the booster station was placed in service in January 2021. The project was completed in October 2021. The increased costs can be attributed to delays prior to and during construction to confirm location of Southern California Edison buried electrical utilities, to complete an electrical service design connection, and temporary tank bladder installation for maintaining operation during construction.

4. Project Code I15-510037, Ventura Tank Rehabilitation 2015-2017 (COMPLETED)

Q50. Please describe.

A50. The construction on this project began in 2015 and resolved deficiencies with the existing 6,000,000-gallon steel above-grade water storage tank. While most of the construction was completed in 2016, the final change order and retention payment was delayed due to final contract resolution. In November of 2019, the tank was placed in service and used and useful, the contractor and California American Water came to an agreement and the remaining retention, which was being held, was billed by the contractor to complete the project.

1 **D. Central Division Completed Projects**

2 **1. Project Code I15-400096, SCADA Upgrade Program (2018-2020)**
3 **(COMPLETED)**

4 Q51. Please describe.

5 A51. This project was completed in 2020. This program is a continuation of an investment
6 project for ongoing replacement of SCADA equipment within the Central Division. Work
7 completed includes SCADA upgrades for the Ralph Lane well site and Hidden Hills
8 treatment plant; a PLC upgrade at the Segunda Pump Station and Rancho Canada Well
9 Site; miscellaneous PLC, radio, and modem upgrades; and replacement of instrumentation
10 equipment such as pressure transducers and flow meters and replacement of the Ord Grove
11 Treatment Plant PLC and controls system along with miscellaneous PLC upgrades in the
12 Central Division.

13
14 **2. Project Code I15-400106, New Well Development Program (2018-2020)**
15 **(COMPLETED)**

16 Q52. Please describe.

17 A52. The technical report was completed in 2019 and serves as the basis for the Company's
18 proposed work under the New Carmel Valley Well Project (I15-400141), Well
19 Rehabilitation Programs (I15-400131 and I15-400162), and Well Installation and
20 Replacement Program (I15-400164). The report prepared an overall well strategy for the
21 lower Carmel Valley wells to identify and prioritize well sites, new wells, and
22 improvements to existing wells to maximize extraction capacity. The first two well
23 projects identified in the report being completed are: 1) new well is planned to be drilled
24 on-site to replace the existing Rancho Canada Well #2 that has declined in capacity and is
25 reaching the end of its life, and 2) new well is planned to be drilled on-site to replace the
26 existing Schulte Well #2 that also has declined in capacity and is reaching the end of its
27 life.

1 Implementing the identified improvements, new well installation and rehabilitation of
2 existing wells is expected to increase California American Water's ability to pump
3 groundwater from the Carmel River basin to maximize water rights, including the Aquifer
4 Storage and Recovery ("ASR") Program when river flow permits.
5

6 **3. Project Code I15-400113, Replace Carola #1 Tank (COMPLETED)**

7 Q53. Please describe.

8 A53. This project was approved in the 2016 rate case and was completed in 2019. Carola Tank #
9 1 is a 125,000-gallon bolted steel distribution storage tank and was rehabilitated instead of
10 replaced due to multiple issues as described in the 2019 GRC testimony. While this project
11 has increased system reliability and slightly extended the useful life of the tank, this tank
12 will still need to be replaced.
13

14 **4. Project Code I15-400114, Replace Chualar Tank #1 (COMPLETED)**

15 Q54. Please describe.

16 A54. This project was approved in the 2016 Rate Case and was completed in 2020. In 2016,
17 California American Water engaged TIC to perform an inspection for the rehabilitation of
18 the tank. TIC recommended that the tank be replaced rather than rehabilitated due to the
19 significant costs that would be incurred during rehabilitation and the desire to replace older
20 bolted steel tanks with a new welded steel tank. The old tank was severely aged and had an
21 "elephant foot" bulge on the lower section of the tank for many years. Also, the old tank
22 was a bolted steel tank with corrosion at its bolt penetrations. The old tank was replaced
23 with a new tank of the same capacity. This project has increased system reliability and
24 improved site aesthetics.
25

26 **5. Project Code I15-400118, Valves and PRVs Program (2018-2020)**
27 **(COMPLETED)**

28 Q55. Please describe.

1 A55. This project finished in 2020 and included the Presidio regulating station and valve and
2 PRV replacements in Seaside and Pacific Grove. This investment project was a
3 continuation of approved mainline valve replacement projects, and this scope of work is
4 expected to continue under RP.

5
6 **6. Project Code I15-400119, Fire Protection Improvement Program (2018-**
7 **2020) (COMPLETED)**

8 Q56. Please describe.

9 A56. This project was completed in 2020 with the installation of 3,500 feet of 4-inch and 8-inch
10 water main and the installation of 6 new fire hydrants. These upgrades increased the
11 system's ability to deliver water for firefighting. California American Water has
12 historically worked with a Fire Flow Task Force consisting of representatives from the fire
13 protection agencies that serve the area to review, recommended improvements, and
14 prioritize the projects to be implemented each year.

15
16 **7. Project Code I15-400120, Pump Station Rehab Program (2018-2020)**
17 **(COMPLETED)**

18 Q57. Please describe.

19 A57. This 2016 GRC approved project was completed in 2021. This program included the new
20 High Meadows Pump Station and the removal of the hydropneumatic tank at the Encina
21 Pump Station. The High Meadows Pump Station project had increased costs due to a new
22 electrical service which had to be brought from the adjacent street to service the pump
23 station and the replacement of an electrical transformer required by the electrical utility.

24
25 **8. Project Code I15-400121, Main Replacement Program (2018-2020)**
26 **(COMPLETED)**

27 Q58. Please describe.

1 A58. This project was completed in 2020 with the following main replacement projects: 1)
2 installed about 1,800 feet of new 8-inch main in Cannery Road within the City of
3 Monterey; 2) installed approximately 2,000 feet of new 8-inch main in Ord Grove Avenue
4 within the City of Seaside; 3) installed approximately 700 feet of new 6-inch main in
5 Castro Road within the City of Monterey; 4) installed about 520 feet of new 4-inch main in
6 14th Street within the City of Pacific Grove; 5) installed approximately 500 feet of new 4-
7 inch main in Gibson Alley within the City of Pacific Grove; 6) installed approximately
8 3,400 feet of new 8-inch main in Carmel Knolls Road within the City of Carmel; 7)
9 installed approximately 1,000 feet of new 6-inch main in Beaumont Avenue within the City
10 of Pacific Grove; 8) installed approximately 2,300 feet of new 6-inch main in Lincoln and
11 Lawton Roads within the City of Pacific Grove; 9) installed about 1,100 feet of new 4-inch
12 & 6-inch main in Edinburgh, Altura, Theresa, Placer, and Loch Streets within the City of
13 Del Rey Oaks and the City of Seaside; and 10) installed about 350 feet of new 6-inch main
14 in Dunecrest Avenue within the City of Monterey.

15
16 **9. Project Code I15-400123, Annual Program - Well Rehab Program**
17 **(2018-2020) (COMPLETED)**

18 Q59. Please describe.

19 A59. Well Rehabilitation work was completed on Berwick 8 and Paralta wells during 2018. In
20 2019, well rehabs were completed on Ambler Well #4 and Chualar Well #4, Eastwood
21 Canada Well, Berwick Well #9, Los Laureles Well #5, Luzern Well, Plumas Well, Ryan
22 Ranch Well, Schulte Well #2, and Toro Well #1. In 2020, rehabilitation was completed on
23 Ord Grove Well, Plumas Well #4, Rancho Canada Well, and Toro Well#2. This scope of
24 work continued with IP number I15-400131 in the 2021-2023 rate case and is proposed to
25 continue with IP number I15-400162 in the 2024-2026 rates case.

26
27 This program is a continuation of the previously approved Well Rehabilitation Program
28 I15-400093, with the expanded scope of replacing or redrilling wells if the initial well

evaluation indicates that rehabilitation is not viable and the addition of wells if added capacity is needed to meet system demands.

10. Project Code I15-400124, Huckleberry Hydropneumatic Tank Replacement (COMPLETED)

Q60. Please describe.

A60. This project was approved in the 2019 GRC and was completed in 2022. The existing surge tank that served the Huckleberry Pneumatic pressure zone showed signs of rust and decay and had reached the end of its useful life. Additionally, the existing pumps were sized for fire flow and were not operating within their design range. The tank has been removed, and three small distribution pumps have been added to serve the pressure zone, while leaving the large pumps to be used for fire suppression, when needed. This project made modifications to an existing underground vault which was suffering from water infiltration. The conduit entering the vault was replaced, and drainage was added to the exterior of the vault to abate this historical issue.

11. Project Code I15-400125-01, 02, 03, 07, 09, 11 Main Replacement Program (2021-2023) (PORTION COMPLETED)

Q61. Please describe.

A61. Portions of this project are completed, in-service, and used and useful. Please see Section XI, Carry-Over Capital Investment Projects, Project Code I15-400125 for more information regarding portions completed and the continuing portions of the project. The main replacements completed so far are Echo Ave., Lighthouse Ave., Kimball Ave., Del Monte Ave., Viejo Road, and Spruance Road.

12. Project Code I15-400129-05, 06, 07 Tank Rehabilitation Program (2021-2023) (PORTION COMPLETED)

Q62. Please describe.

1 A62. Portions of this project are completed, in-service, and used and useful. Please see Section
2 XI, Carry-Over Capital Investment Projects, Project Code I15-400129 for more
3 information regarding portions completed and the continuing portions of the project. The
4 tanks completed so far are Ranchitos #1, Hilby #1, Hilby #2, Ave., Lighthouse Ave.,
5 Kimball Ave., and Del Monte Ave.

6
7 **13. Project Code I15-400131, Well Rehabilitation Program (2021-2023)**
8 **(PORTION COMPLETED)**

9 Q63. Please describe.

10 A63. Portions of this project are completed, in-service, and used and useful. Please see Section
11 XI, Carry-Over Capital Investment Projects, Project Code I15-400131 for more
12 information regarding portions completed and the continuing portions of the project.

13
14 **14. Project Code I15-400149-01, 02 MRY-CRRDR Property Rockfall**
15 **Safety Project, Phase 1 and Phase 2 (COMPLETED)**

16 Q64. Please describe.

17 A64. These two projects are considered Performed Not Yet Adopted projects. Please see Section
18 XII, Performed or Planned Not Yet Adopted, Project Code I15-400149 for more
19 information regarding this completed project. completed.

20
21 **15. Project Code I15-400151, MRY-LPD Siphon/Fish Trap Improvements**
22 **Project, (COMPLETED)**

23 Q65. Please describe.

24 A65. These projects are Performed Not Yet Adopted projects. Please see Section XII, Performed
25 or Planned but Not Yet Adopted, Project Code I15-400151 for more information regarding
26 this completed project.

27
28 **16. Project Code I15-420005, MWW-Las Palmas Chlorine Contact Basin**

1 (COMPLETED)

2 Q66. Please describe.

3 A66. This completed project is a Performed, Not Yet Adopted. Please see Section XIV, Memo
4 Account Projects for more information regarding this completed project.

6 17. Project Code I15-480010, Toro Booster Station Replacement

7 (COMPLETED)

8 Q67. Please describe.

9 A67. This project was completed in 2020. This project consisted of replacing the Lower
10 Markham booster pumping station with a new skid mounted station, including replacing the
11 electrical equipment. This upgrade provides improved system reliability to meet peak
12 demands. Through a combination of higher pumping and the use of existing storage in the
13 Upper Markham tank, the Upper Markham zone provides the recommended fire flow, even
14 during maximum demand periods.

16 18. Project Code I15-490001, Garrapata Slide Recovery (COMPLETED)

17 Q68. Please describe.

18 A68. This project was completed in 2022. In February 2017, a series of landslides occurred on
19 the slope beneath a storage tank site in the Garrapata water system, impacting two storage
20 tanks. This project repaired the damaged slope by constructing a soil nail wall with
21 shotcrete facing to stabilize the slope and protect the damaged slope area from erosion.
22 Drainage was also improved at the base of the wall and a rip-rap lined drainage ditch along
23 the access road was installed. The dirt access road has also been surfaced with compacted
24 base rock. In addition, the inlet and outlet piping to the tanks has been replaced in a more
25 accessible location. Originally, the pipes ran down along the edge slope area. They have
26 been relocated to run along the tank site access road. The entire Garrapata water system
27 benefits from the increased stability and resulting reliability of the site repairs. The original
28 project estimate was based on preliminary soil investigations and estimates. The final

project cost is based on final contract amount and contract change orders which included new inlet and outlet piping, access road surface and drainage improvements, slide materials clearing, increased labor and materials for structural improvements, a safety handrail, and an easement for use of property.

E. Northern Division Completed Projects

**1. Project Code I15-600032, Walerga Road Bridge Pipeline
(COMPLETED)**

Q69. Please describe.

A69. This project was completed in the Spring of 2021. Work completed for the relocation of the 16-inch water pipeline involved the construction of approximately 700 feet of buried 16-inch pipe near, and leading up to, the proposed bridge abutment, and 600 feet of 16-inch pipe on the proposed Walerga Road Bridge.

California American Water owns a 16-inch water main that crosses beneath Dry Creek, in the West Placer water system. The pipeline is in a multi-use easement owned by Placer County adjacent to the County's existing two-lane Walerga Road Bridge. Placer County plans to replace the existing two-lane bridge with a four-lane bridge. The footprint of the new, wider bridge is expected to extend over California American Water's existing 16-inch water main and the County has requested that California American Water relocate the pipe, at our expense, in accordance with our franchise agreement with the County. It is important to recognize that abandoning the pipe is not an alternative because it is a vital piece of water supply infrastructure for that area.

Throughout 2017 and 2018, California American Water coordinated with Placer County and the bridge design engineer for relocation of the existing 16-inch water pipeline. The existing water pipeline was abandoned, and the new pipeline was located within the box girder of the new bridge. Locating the water pipeline on the new bridge is beneficial as it is

1 expected to allow for easier routine maintenance and repairs, compared to the pipeline
2 crossing under Dry Creek.

3
4 **2. Project Code I15-600051, Arden Intertie (COMPLETED)**

5 Q70. Please describe.

6 A70. This project was put into service in late 2020 with final completion in early 2021. Work
7 completed for this project included connecting to the City of Sacramento's water system
8 and the construction of a booster station to increase the pressure from the City of
9 Sacramento into California American Water's existing system to comply with the
10 requirements of DDW and local fire district.

11
12 This capital investment project is comprised of an interconnection with the City of
13 Sacramento, inclusive of a booster station, which is needed to provide the requisite water to
14 maintain desired level of service to customers. The Arden service area covers over one
15 square mile, which is located just east of the Cal Expo grounds and the City of Sacramento
16 limits. It has a high percentage of commercial area that is currently being redeveloped,
17 thus an increase in fire flow demands. The system serves approximately 1,195 customers,
18 with a significant number of commercial and multi-family customers. The Arden system
19 was capable of maintaining supply during average day demands ("ADD") periods.
20 However, the current maximum day demand ("MDD") and Fire Flow, as well as peak hour
21 demands ("PHD"), exceeded available supplies that are necessary to maintain the minimum
22 requisite system pressure of 40 psi.

23
24 **3. Project Code I15-600067, Isleton Distribution System Improvement**
25 **(COMPLETED)**

26 Q71. Please describe.

27 A71. This project was completed in December 2020. Work completed included permitting the
28 existing water main in the levee to leave it as is and the construction of a new 8-inch water

1 pipeline that will loop the water system, providing redundancy and improving water quality
2 near the existing dead-end main.

3
4 In 2009, California American Water submitted an encroachment permit application to the
5 Central Valley Flood Protection Board (“CVFPB”) and the U.S. Army Corps of Engineers
6 (“USACE”) for the construction of a new 8-inch potable water pipeline to be located within
7 First Street and A Street in Isleton. The purpose of this pipeline extension was to loop the
8 distribution system in the area, which would provide system redundancy and improve water
9 quality near the existing dead-end main. During review of this permit application, it was
10 determined that USACE did not have any record of a permit for the existing 8-inch potable
11 water pipeline located within First Street, which is also the crown of the Sacramento River
12 levee. California American Water was directed to relocate this pipeline, associated water
13 services, and other appurtenances to outside of the levee prism.

14
15 In 2016, California American Water submitted an encroachment permit application to
16 CVFPB and USACE for relocation of the water pipeline, services, and appurtenances
17 located within the levee prism. From 2016 to present, California American Water has been
18 coordinating extensively with these two Agencies and Native American Representatives for
19 design review discussions and permitting efforts. In November 2018, during a design
20 review and permitting meeting, USACE informed California American Water that an
21 application could be submitted for USACE approval of permitting the existing water
22 pipeline, services, and appurtenances in-place within First Street. In March 2019,
23 California American Water submitted a revised application to USACE and CVFPB for a
24 request to permit the existing water infrastructure within the levee, and for the construction
25 of a new 8-inch water pipeline that will loop the water system, providing redundancy and
26 improving water quality near the existing dead-end main.

27
28 **4. Project Code I15-600068, Sacramento District Annual SCADA**

Maintenance Program 2018-2020 (COMPLETED)

Q72. Please describe.

A72. This program was completed in 2020. Work done between 2018-2020 included replacing the current SCADA servers with new virtualized servers and upgrading the software licenses, adding new systems to the central SCADA system, and adding or replacing aging equipment at well sites with new electrical, instrumentation, controls, and SCADA programming.

This capital IP is for on-going work to keep the SCADA equipment upgraded in the Sacramento District. A significant investment in SCADA equipment has been made in the past several years to provide better monitoring and control of California American Water facilities. The Sacramento District has systematically installed SCADA equipment at most of its operational well sites, treatment plants, booster station sites, tank and booster station sites, and numerous inter-agency water connections, thereby giving it the ability to monitor and control the facilities and maintain adequate potable water for the area customers. To keep this system up and running, SCADA equipment must be maintained and updated. By continuing this historical program of providing ongoing maintenance and replacement of SCADA equipment, California American Water expects to be able to maintain and enhance water system reliability.

**5. Project Code I15-600071, Sacramento District Annual Well
Rehabilitation Program (2018-2020) (COMPLETED)**

Q73. Please describe.

A73. Work completed between 2018-2020 included rehabilitation of well sites for Oak Forest, Summerplace, Tally Ho 2, Fort Sutter, and the replacement of an existing well in the Arden system (Wittkop 2). Oak Forest, Summerplace, and Tally Ho 2 had both above ground and below ground rehabilitations. Above ground included replacing the electrical equipment, instrumentation, pump, motor, and site improvements to bring them up to current code and

1 regulations. Downhole rehabilitation of videoing the wells and cleaning was also included.
2 Fort Sutter was converted from an oil lube to a water lubricated well, videoed, cleaned, and
3 a new motor was installed. Wittkop Well was abandoned, and Wittkop 2 was redrilled on
4 the same site. The well was equipped with new electrical equipment, instrumentation, an
5 upsized storm drain to meet the well flushing capacity, and offsite pipeline improvements
6 to deliver the new capacity of the well to the system.
7

8 **6. Project Code I15-600072, Sacramento District Main Replacement**
9 **Program (2018-2020) (COMPLETED)**

10 Q74. Please describe.

11 A74. Work completed under this program included the design, construction, and permitting for
12 the completion of new 12-inch and 24-inch water mains within the West Placer Service
13 Area. The 12-inch and 24-inch pipelines are approximately 1,550 and 2,600 linear feet,
14 respectively. These pipelines looped the southwestern area of the West Placer distribution
15 system, which was needed to increase system reliability, redundancy, and operational
16 efficiency of water received from the PFE Intertie located at the eastern end of the
17 distribution system.
18

19 **7. Project Code I15-600083, Sacramento District Backyard Main**
20 **Replacement Program (COMPLETED)**

21 Q75. Please describe.

22 A75. This program was completed in 2021. The work completed under this program included
23 replacing a steel backyard water main in Walnut Grove near 1st Avenue and replacing
24 backyard mains in the Antelope service area.
25

26 This capital investment project is to address an on-going operations challenge of backyard
27 mains in service areas. These service areas include residential areas where water mains
28 were installed in backyards, making maintenance and repair extremely difficult, costly, and

invasive to homeowner privacy. This project replaced multiple backyard mains with properly sized distribution mains within the public rights-of-way. The benefits of this project are improved customer service through a reduction in encroachment into private properties to repair the existing mains. Replacement of antiquated mains also reduces the likelihood of service interruptions due to main breaks and a reduction in unaccounted for water.

8. Project Code I15-610023, Larkfield District Wildfire Water System Recovery – Meters and Services (COMPLETED)

Q76. Please describe.

A76. This completed project is a Memo Account project. Please see Section XIV, Memo Account Projects for more information regarding this completed project.

9. Project Code I15-620002, Dunnigan Wastewater District System Improvements (COMPLETED)

Q77. Please describe.

A77. This completed project is a Memo Account project. Please see Section XIV, Memo Account Projects for more information regarding this completed project.

10. Project Code I15-650001, Meadowbrook District Hydropneumatic Tanks and Electrical Upgrades (COMPLETED)

Q78. Please describe.

A78. This project was completed in Spring 2021. Work completed included upgrading the electrical equipment and controls at each well site to meet current electric code requirements and California American Water standards, installing a generator at the largest well (Well 4) for backup power, and replacing the hydropneumatic tanks with properly sized, designed and code rated tanks.

The Meadowbrook District has three active wells (Well 4, 5, and 6), each of which has one or more hydropneumatic tanks that are not code rated. Several of the existing tanks are large industrial size propane tanks and therefore the interior coating is not NSF 61 certified. All the hydropneumatic tanks are water-logged and there are no provisions for automatically and/or in several cases manually adding air so that the tanks can function as required. Instead of modifying the tanks, the previous owner's solution was to install a variable frequency drive ("VFD") at each of the well sites. To address the heat given off by the VFD, small wall mounted air conditioning units were installed in the electrical buildings, which are replaced frequently due to failure. In addition, there is currently no standby power at any of the wells.

This project is expected to improve overall system reliability, fix the identified well site operational problems, and address water quality and compliance issues. The addition of a standby generator for emergency power at the largest well within the system, Well 4, is expected to allow the well to meet normal system demands in the event of loss of power throughout the system. This limits the chance of a Notice of Violation ("NOV") due to a loss of pressure in the distribution system. Title 22 requires that water system components in contact with potable water (i.e., pipe interior coating, etc.) be NSF 61 certified. The existing industrial propane tanks at the well sites are not NSF 61 certified, and therefore the water system is currently not in compliance with all Title 22 requirements. All existing tanks at the three well sites would be removed. The three new hydropneumatic tanks and piping are all NSF 61 certified.

XI. CARRY-OVER CAPITAL INVESTMENT PROJECTS

A. San Diego County District Previously Approved Carry-over and Ongoing IP

1. Project Code I15-300006, San Diego PRV Modernization Program (ONGOING)

Q79. Please describe.

1 A79. This previously approved 2013 GRC project started construction in April 2022 and the
2 project is targeted for completion by the end of 2022.

3
4 Project Background:

5 This capital investment project is for the installation of a micro-hydroelectric turbine
6 generator (“HTG”) unit at the Highland Tank PRV Station located in California American
7 Water’s San Diego County District. As presented in previous testimony in the 2016 GRC,
8 the purpose of this project is to use the excess head in the tank’s existing water supply
9 pipelines to produce electrical energy that would otherwise be lost. The amount of power
10 generated by this turbine generator is estimated to be between 64 and 150 kw. California
11 American Water owns and operates the existing Highland Tank PRV Station that is used to
12 distribute water for residential and/or commercial purposes. The Highland Tank PRV
13 Station is located immediately adjacent to an existing 3-million gallon above-ground steel
14 tank that was built in 1963. Under Resolution W-4854 adopted on December 2, 2010, the
15 Commission authorized, among other things, California American Water’s Beyer
16 Boulevard PRV Station for the installation of an HTG within the San Diego County
17 District. In addition, the Commission recognized that this project would be a California
18 corporate project, for purposes of accounting the investment dollars. After Resolution W-
19 4854, California American Water determined the Highland Tank PRV Station exceeds
20 Beyer Boulevard PRV Station generation potential by more than four times. As such,
21 California American Water submitted Advice Letter (“AL”) 922 to the Commission
22 requesting authorization to specify Highland Tank PRV Station as the new location for the
23 Pressure Reducing Valve Modernization and Energy Recovery Memorandum Account.
24 AL 922 was approved by the Commission on April 19, 2012, under Resolution W-4913.
25 Therefore, California American Water proposes implementation of the Highland Tank PRV
26 Modernization Project through a program sponsored by the California Water Association
27 and the Commission under Commission Resolution No. W-4854. At this time, it is
28 anticipated the power generated by this project would be used locally (i.e., within the

1 immediate community or in the city of San Diego) via San Diego Gas and Electric's
2 ("SDG&E's") local electrical distribution system. Because of the issues with the Zeropex
3 equipment, the other water companies involved in this initiative (e.g., Golden State Water
4 Company, California Water Service Company, and San Jose Water Company) have
5 decided to no longer proceed with the research design and development project. It is
6 important to recognize that California American Water originally intended to use Zeropex
7 for the equipment, but due to recent failures at similar sites, California American Water has
8 opted to pursue a new generator equipment package through Rentricity that would use a
9 Cornell pump in two different sizes. California American Water completed the Planned
10 Development approval process with the City of San Diego. California American Water
11 completed the Federal Energy Regulatory Commission ("FERC") permitting approval
12 process and completed the permitting review process by the City of San Diego in
13 September 2021.

14
15 There was an increase in the project cost related to using a different turbine vendor,
16 recommended design changes during the City of San Diego review process, the extensive
17 plan check review process with the City of San Diego, and driveway improvements
18 required by the City of San Diego. The interconnection with SDG&E is also under review
19 regarding the final meter and electrical interconnection between the hydroturbine and
20 SDG&E power grid.

21
22 **2. Project Code I15-300008, Replace 2,450 Feet of 18-inch diameter main**
23 **in Elm Avenue (CARRY-OVER)**

24 Q80. Please describe.

25 A80. This previously approved 2013 project began construction in the fall of 2020 and
26 completion is expected in summer of 2022.

27
28 Project Background:

1 This project relates to the replacement of an 18-inch diameter welded steel, cement lined
2 water main that was installed in 1965. This main has a history of main breaks and based on
3 investigations during main break repairs, exhibits evidence of advanced structural
4 deterioration, representing a risk to system operation. Since 1990, there have been seven
5 main breaks which resulted in extensive repair costs, city impacts and widespread customer
6 impacts. The section in question is approximately 2,640 linear feet along Elm Avenue
7 between Hollister Street and 27th Street. The “Main Leak Investigation Reports” indicate
8 severe deterioration of the pipe as indicated within the San Diego County District CPS.
9 The pipe has “blown out” and “deteriorated” which has resulted in “holes” in the pipe.
10 This pipe requires either a full structural rehabilitation or full pipe replacement. It is
11 recommended that open-cut replacement of the existing 18-inch diameter steel main be
12 completed with new ductile iron pipe. In addition, at the existing railroad crossing, the
13 existing pipe should be removed, and a new 18-inch ductile iron main installed within the
14 existing casing.

15
16 This project started design in 2016 with geotechnical work and surveying. Design plans
17 are near completion, and the permitting process is expected to be complete shortly with the
18 City of San Diego. This project began construction in 2020 and is expected to be
19 completed by the summer of 2022. The majority of the main has been replaced and is in
20 service except for the water main located under the Metropolitan Transit System (“MTS”)
21 electric rail track.

22
23 The costs associated with this project increased during the plan preparation and plan review
24 process with the City of San Diego. The planned construction in 2019 was delayed into
25 2020 because of the City of San Diego Plan review process. The cost increases included
26 easement acquisition, easement appraisal, surveying, design changes per city comments,
27 MTS permit requirements, SDG&E Power Pole bracing design and the need to fully slurry-
28 seal the entire length of Elm Avenue. Additionally, construction is expected to include

1 slurry seal of the entire street width segment of Elm Avenue which was not anticipated
2 during initial estimates of the project. The project also required acquisition of easements
3 for the construction of the new water main on the west side of the railroad casing crossing.
4 This involved development of costs relating to easement acquisition to complete the design.
5

6 **3. Project Code I15-300010, Silver Strand 16-inch diameter Transmission**
7 **Main Replacement (CARRY-OVER)**

8 Q81. Please describe.

9 A81. This previously approved 2013 GRC project currently has 14,350 feet installed and is
10 currently scheduled to complete another 16,500 feet of main by 2026. The completed
11 portions include 5,950 feet of 16-inch main in Imperial Beach and 8,400 feet of main
12 within the Navy Coastal Campus located in Coronado. The remaining main replacement
13 includes 37,650 feet of main that is in Coronado starting at the north entrance of the Navy
14 Coastal Campus base and extending North along Highway 75 otherwise described as the
15 Strand and continuing down Orange Avenue through the downtown of Coronado until it
16 terminates at Orange Avenue and 4th Street. Construction for the next phase is planned to
17 begin at the end of 2022 provided final permit issuance occurs before that time.
18

19 Project Background:

20 This original capital investment project is related to the replacement of approximately
21 52,000 linear feet of 16-inch diameter unlined, pit cast iron main, which was installed in
22 1912 from Coronado (originating at near the end of Orange Avenue), along the Strand, and
23 then along Palm Avenue in Imperial Beach, and terminating on Palm Avenue in the City of
24 San Diego (at Saturn Boulevard). This water main has a history of main breaks. A main
25 break on November 10, 2015, resulted in a closure of State Highway 75 and the adjoining
26 bike path for nearly two hours and a main break in 2018 also resulted in the closure of
27 Highway 75. In 2019, another break on the 16-inch main occurred in Imperial Beach near
28 the intersection of 7th Street and Palm Avenue in Imperial Beach.

1 As an update to the current progress of the project, the design firm Brown and Caldwell
2 was awarded the preliminary design and permitting phase of the project in October 2017.
3 The project began initial geotechnical and surveying work that has progressed through
4 2019. The current project schedule has appropriate preliminary engineering design time to
5 accommodate for CalTrans permit approval for geotechnical borings, potholing and
6 structural review, utility conflicts verification, feedback from cities, and the permitting
7 phase with the City of Coronado as the CEQA lead agency and review required by
8 CalTrans. Easement acquisition with State Parks and United States Navy for the new
9 alignment are underway and progressing.

10
11 Approximately 5,950 feet of 16-inch main portion within the City of Imperial Beach on
12 Palm Avenue from Corvina Street to 13th Street was replaced. Construction began in July
13 2019 and the new main was placed in service in August 2020. This phase of the project
14 was completed in December 2021. The construction of this section included some
15 additional costs related to paving in addition to the need to replace services and connecting
16 mains that were in poor condition which expanded the scope of work.

17
18 It is important to note that the United States Navy is an existing customer of California
19 American Water, and they worked with California American Water to install a new water
20 transmission main along the western portion of the Coastal Campus, funded entirely as part
21 of their infrastructure improvements that are located within the City of Coronado. This
22 included the installation of 8,400 feet of 16-inch PVC water main. This new water
23 transmission main was completed and is currently in service.

24
25 Previously, California American Water separated this investment project into phases to
26 better manage the project between the City of Imperial Beach and City of Coronado. Now
27 that the Imperial Beach and Coronado Portion through the Coastal Campus Navy base are
28 complete, California American Water expects to work on the final phase of the project

1 including the replacement of the remaining 37,650 feet of main in Coronado. The
2 remaining portion of the project is expected to be completed by 2028. The construction of
3 the remaining portion may be phased to accommodate the City of Coronado's tourist
4 season and mitigating snowy plover nesting season. The 16,500 feet are assumed to be
5 completed from the time of preparing this testimony to the end of 2026, with the remaining
6 work pipe to be installed continuing into the next GRC cycle.

7
8 **4. Project Code I15-300014, Coronado Reliability Supply Project**
9 **(CARRY-OVER)**

10 Q82. Please describe.

11 A82. This previously 2016 approved GRC project began with a monitoring system installed on
12 the Transbay Transmission Main in June 2019. Echologics was selected to install the
13 EchoShore-TX Transmission Main Monitoring system. The advanced technology platform
14 is designed to monitor high risk transmission mains and is non-intrusive. To date, there
15 have been no leaks detected. Additionally, in February 2021, proposals were requested for
16 the multi-faceted reliability study and awarded to the best value consultant. The proposals
17 received were higher than anticipated. The project began in August 2021. The pipe
18 inspection of the Transbay Transmission Main is expected to be completed in Spring 2022
19 and the final report for the multi-faceted reliability study is expected to be completed in
20 December 2022.

21
22 Project Background:

23 The City of Coronado is part of California American Water's San Diego County District
24 water system's Highland pressure zone which also covers the City of Imperial Beach and
25 portions of the Cities of San Diego and Chula Vista. Coronado is located at the northern
26 end of the Highland pressure zone and is the largest and most geographically remote
27 service area within the zone. The Coronado service area derives its water supply, including
28 peak hour and fire flows, solely from a 24-inch diameter transmission main that crosses

San Diego Bay (Transbay Transmission Main). No local distribution system storage exists within Coronado. A failure or extended interruption of the 52-year-old main would leave the Coronado service area dependent on the use of emergency water supply measures with reduced fire protection for a protracted length of time. The transmission main is therefore considered a high consequence asset and must be managed as such.

The multifaceted reliability study is expected to provide recommendations to support the Coronado Storage Tank and Pump Station (I15-300020), Strand Two-Way Pump Station (I15-300021, Remove Navy Amphibious Base Abandoned Pump Station Vault (I15-300022) and Transbay Transmission Main Rehabilitation (I15-300023) projects.

5. Project Code I15-300018, SCADA Improvements (CARRY-OVER)

Q83. Please describe.

A83. This previously approved 2019 GRC project has not yet started. It is expected to begin design in the summer of 2022 and be constructed in 2023.

Project Background:

The California American Water's San Diego County District system includes SCADA facilities to allow Operations staff to remotely monitor, trend, and store key system operation parameters. Additionally, remote monitoring allows for detection and reaction more promptly to system anomalies over a large, geographically diverse service area. A robust SCADA system also provides the capability to use Operations staff more efficiently, reducing the travel time required to travel to remote source of supply meters to record weekly usage. Distribution storage tank water levels can be continuously monitored and trended, providing the capability to assess peak water demands, a key operational parameter, more accurately. Likewise, storage tank level alarms can be detected, assessed, and reacted to more promptly with SCADA capabilities. Logging and storing operational

parameters also provides engineering staff with the data needed to calibrate hydraulic models.

Installation of SCADA systems at all PRV facilities would allow Operations staff to remotely monitor pressures and set alarms to report failures in equipment. The recommended project entails installation of inlet and outlet pressure monitoring and SCADA transmission equipment at all PRV facilities. The improved central monitoring capability allows the operations staff to respond promptly to PRV malfunctions rather than being reliant upon customer calls and/or field crew observations of water surfacing from below grade PRV vaults. The risk of main breaks and customer complaints is expected to thereby be reduced.

Operations staff have also expressed their concerns for safety when accessing the Piccard #2 PRV station vault due to its location being within the traveled way at the busy intersection of Palm Avenue and Piccard Avenue. It is therefore proposed to relocate the vault to the side of the roadway to improve workplace safety. Therefore, a new below grade PRV vault would be constructed for the Piccard #2 PRV station.

The project is expected provide increased safety in accessing Piccard #2 PRV station, improved monitoring of system pressures and response time to equipment failure, collection historical and real-time pressure data, better max day system analysis, and additional data for improved hydraulic model calibration.

6. Project Code I15-300021, Strand Two-Way Pump Station (CARRY-OVER)

Q84. Please describe.

A84. This previously approved 2019 GRC project has not yet started as final recommendations from the Coronado Reliability Supply (Project I15-300014) needs to be completed first. It is expected to begin design in 2022 and be constructed in 2023.

Project Background:

The existing Silver Strand Relay Station serves as an emergency source of supply pumping facility for Imperial Beach and portions of San Diego when that area's primary source of supply, the Montgomery Meter Station, is unavailable. The station was last renovated in 1991 and its pump, motor, and motor controls are aged and in a deteriorated condition, requiring replacement. The facility can only pump from north to south and requires installation of a permanent power source to ensure it can be placed into service on short notice. To improve California American Water's reliability of supply, the facility should also be reconfigured to allow it to pump both north to south, and south to north, such that it can serve as a backup for either of the San Diego County District's primary source of supply interties (Montgomery and Harbor Drive) with the City of San Diego water system.

The existing below-grade pump station vault was constructed around the existing 16-inch pipeline. Minimal space exists within the vault to allow for either installation of a second pump or the additional piping and valving, which would be required to allow for a single pump to pump in two directions. In addition, the replacement pump station must be connected to the future replacement 16-inch transmission main. It is therefore recommended that the existing Silver Strand Relay Station be replaced with a new below grade pump station interconnected with the new 16-inch transmission main currently being constructed in Silver Strand Boulevard. The project would be designed to include the piping and valving necessary to operate the pump in either direction, and the vault housing the pump and electrical equipment would be located to interconnect with the replacement 16-inch transmission main.

The benefit of this project is to allow the 16-inch transmission main along the Strand to serve as a backup source of supply to Coronado and meet the projected 2035 average day demands north of the Silver Strand Relay Station. In addition to the required pumps, electric utility service is available along Highway 75, and it is therefore recommended that the upgraded pump station include a permanent electrical service. A permanently mounted standby generator installed within a secured area directly adjacent to the booster station is also recommended.

**7. Project Code I15-300022, Remove Navy Amphibious Base (NAB)
Abandoned Pump Station Vault (CARRY-OVER)**

Q85. Please describe.

A85. This previously approved 2019 GRC project has not yet started as coordination efforts with the Navy need to occur and final recommendations from the Coronado Reliability Supply Study (I15-300014) needs to be completed. Design is expected to begin in late 2022 and construction is expected to proceed in 2023.

Project Background:

The project proposes to retire the existing NAB pump station within California American Water's San Diego County District. The abandoned pump station (formally known as Coronado Booster No. 2) located near the Tarawa Road entrance to the Coronado Naval Amphibious Base was decommissioned in 1980. However, occasional leaks have been detected in the vicinity of the abandoned pump station where it is interconnected with the 16-inch Silver Strand transmission main. Therefore, the pump station should be completely removed and the interconnections with the 16-inch main permanently capped.

The abandoned pump station is a below grade vault that was previously used as part of a two-way emergency intertie with the Navy's water system. The station was used to boost water from the Navy system into California American Water's Coronado service area

which operated on a former standpipe before the activation of the Transbay Transmission Main in 1971. The pump station was constructed in 1935 and subsequently decommissioned in 1980, including the removal of all equipment and piping. Following the pump station abandonment, leaks were reported near the abandoned station. California American Water Operations staff report that the below grade interconnecting piping was left in place and was cut and capped approximately 15-feet from the vault to stop the leakage. California American Water proposes to completely remove the abandoned vault to eliminate the need to continue maintenance and repair of the unused infrastructure. This will include removal of the below grade pump station vault, associated piping, valves, and connections to the 16-inch Strand Transmission main and replacement of the cut-ins to the Strand transmission main with a straight run of 16-inch PVC main.

**8. Project Code I15-300024, Main Replacement Program (2021-2023)
(ONGOING PROGRAM)**

Q86. Please describe.

A86. This previously approved 2019 GRC program began construction in 2021 including the construction of the Glorietta Boulevard Water Main Replacement which was completed in early 2022. Another 1,210 feet of water main replacement in 6th Street is currently in construction and is expected to be completed by the summer of 2022. Additional segments of the water mains are in various stages of design and or construction in 2022 with planned completion expected in 2023.

Project Background:

This program includes the replacement of several sections of water mains within the San Diego County District. This is a three-year program that is expected to start in January of each year and end in December of the same year. California American Water's Coronado system dates to the 1880's and a pipe renewal and replacement program is needed to continue to deliver a high level of service to customers. This project is aligned with the

1 overall customer service level goals of the Company. California American Water prepared
2 the 2019 CBA for Buried Infrastructure, which evaluated the condition and performance of
3 pipe in the Coronado system and prioritized the portions of the distribution system that
4 should be replaced. Additionally, the 2019 CPS used an updated hydraulic model to
5 identify water mains that need to be replaced or upsized based on hydraulic restrictions and
6 fire flow capacity. Mains identified as part of this project are intended to improve pipeline
7 performance including increasing hydraulic capacity (both for domestic service and fire
8 protection), improving water quality by replacing pipe with known internal tuberculation
9 and corrosion, and reducing the number of main breaks in the system which disrupt
10 customer service and the community in general, contribute to water loss, and represent an
11 additional concern for worker safety during main repairs. The local operations staff is
12 responsible for prioritizing and selecting the replacement projects they expect to complete
13 for each year from 2021 to 2023 using the list prepared in the CPS/CBA. This provides
14 flexibility in selecting the projects to be constructed for each year so that they coincide with
15 city street paving.

16
17 **B. Los Angeles County District Previously Approved Carry-over and Ongoing IP**
18 **1. Project Code I15-500009 (IP-0550-118), LA-Santa Fe Well Replacement**
19 **(CARRY-OVER)**

20 Q87. Please describe.

21 A87. This 2013 GRC approved project began design and was delayed due to the proposed
22 regional recycled water project by Upper San Gabriel Valley Water District. That regional
23 recycled water project has been cancelled and therefore we have now shifted the planned
24 redrill of this well to rehabilitation and probable treatment options to bring the Santa Fe
25 Well back into service. Continual monitoring of the PFOA levels at this well site is
26 expected to be performed, and planned treatment options will be considered for the well.
27 Rehabilitation efforts for the well have started in 2022, including pump and motor
28

1 replacement in addition to electrical upgrades. Once operating and quarterly samples for
2 PFOA can be taken, the next step is to construct a treatment system at this well in 2023.

3
4 Project Background.

5 The Santa Fe Well historically was one of the most significant producers in the Duarte
6 system, producing between 10 and 20 percent of the total demand when it was operating at
7 near full capacity of 1,875 gpm. However, well production has significantly decreased for
8 this well and recent PFOA spikes have further hindered operation of this well. In 2017 the
9 operational capacity was only 1,066 gpm. The 2012 Los Angeles County CPS
10 recommended the replacement of this well as it is at the end of its useful life and the casing
11 could fail. The Santa Fe Well project was delayed due to the proposed Indirect Reuse
12 Replenishment Project (“IRRP”) for which the Upper San Gabriel Valley Municipal Water
13 District (“USGVMWD”) was then in the planning and permitting phase. As a result,
14 California American Water worked with the USGVMWD to investigate new sites in the
15 Duarte and Irwindale areas as potential sites to re-drill Santa Fe Well. The site acquisition
16 costs due to the relocation of the Santa Fe Well would be borne by the USGVMWD and
17 they purchased a property located on Crestfield Drive that is within the City of Duarte.
18 Then USGVMWD cancelled the IRRP project thus allowing the Santa Fe Well site to
19 continue to be used. California American Water finalized an agreement with USGVMWD
20 regarding the well easement and land use at the Crestfield property. In 2021 a temporary
21 site access agreement was created to allow California American Water to access and drill a
22 pilot well at the Crestfield site to verify well water production and water quality. The plan
23 for this Crestfield site is expected to be to continue the project as a new well instead of a
24 replacement well location for Santa Fe well. This Crestfield Well project in the Duarte
25 service area is expected to continue under the LA-Well Installation and Replacement
26 Program I15-500067. In 2022 the preliminary phase of permitting and design for the Santa
27 Fe Well is expected to begin at the Crestfield site with construction starting in 2024 and the
28 well being placed into service by the end of 2024. Since previous design plans were started

at the existing site prior to determination that the well would be drilled at the Crestfield site, we ask to recover those costs as an addition to the original project cost request as completely new plans will be needed. Recently PFOA was detected at the Santa Fe Well and in response to this Operations and Engineering have been reviewing water quality trends at this well site. This has resulted in two revisions to the planned redrill of Santa Fe Well. First, the Crestfield site where Santa Fe Well was supposed to be redrilled at is continuing on in the design phase for drilling a new well. However, this well is now a new well and not a replacement well for Santa Fe Well. The Crestfield site is expected to have a pilot well drilled at the location by the end of 2022, and if production and water quality are adequate, then design and construction of a new well is expected to occur at this location. In the interim time between the well being drilled, Operations and Engineering is expected to further investigate whether well rehabilitation and treatment should be used at the Santa Fe Well site. This is expected to be dependent upon levels of PFOA found when the well is returned to service. This project assists in resolving the Duarte supply deficit mentioned in the 2019 Los Angeles County CPS.

2. Project Code I15-500022, Crownhaven Well (Duarte Water Supply Improvement Project, IP-0550-170) (CARRY-OVER)

Q88. Please Describe:

A88. This previously approved 2013 GRC project completed the design and permitting phase in 2021. California American Water is currently working through easement issues with Justice Brothers, Inc., owner of the property adjacent to the Crownhaven Well site, where part of the proposed pump to waste pipeline is expected to be located. Construction is planned for the end of 2022 and to continue into 2023.

Project Background:

The Crownhaven Well Improvement Project includes the replacement of well pump and motor, installation of pump to waste pipeline, and various electrical and mechanical

upgrades at the well site. CAW also plans to install an Ion Exchange Absorption system for treatment of PFAS, if needs arise in the future. The Crownhaven Well is in the southeastern part of the Duarte system and pumps from the Main San Gabriel Basin (“MSGB”).

The Crownhaven Well is over 50 years old and has declined in production due to the plugging of the well screens and the deterioration of pump efficiency. In 2008, California American Water installed a new gravel pack, added a liner, and sonically cleaned the screens, which is recognized as a temporary solution. California American Water must rehabilitate the well to regain its historic capacity. The rehabilitation of the well is a temporary solution that allows the well to remain operational until California American Water can design and install permanent well upgrades. This project assists in resolving the Duarte supply deficit mentioned in the 2019 Los Angeles County CPS.

3. Project Code I15-500030 (IP-0550-38), LA-Oswego Well Replacement and Treatment (CANCELLED)

Q89. Please describe.

A89. This 2013 GRC approved project is now cancelled. The plan to address Raymond Basin pumping needed to meet allocation rights is expected to be addressed with the proposed Raymond Basin Replacement Well Project I15-560003. That project is planned to be located at the new property purchased under I15-560004. The Oswego Well site has limited space and, due to the need to include treatment at a different site, has led to cancelling this project.

To continue providing a reliable supply capacity and minimize the dependence on purchase water purveyors, California American Water proposed to replace this well. The historic capacity of the Oswego Well, located in the San Marino service area, had declined from about 900 gpm to roughly 450 gpm over the last decade and the casing was beginning to fail. Due to the presence of high nitrate contamination (up to 63 mg/l as NO₃), California

American Water must blend this well water with MWD water at the Lamanda Park Reservoir to provide acceptable water quality below the California Department of Public Health blend target contaminant level of 36 mg/l which is 80% of MCL. Rehabilitation of the well is not a viable option because the condition of the casing is poor and close to failure. Therefore, replacing the well offered the most practical option, and it was initially thought that it could occur at the existing site. The project began with the preliminary development phase in late 2013 and additional design and permitting occurred in 2015. However, after further evaluation, due to limited space at the existing site and the need to construct a blend line for treatment at the Lamanda Reservoir site, California American Water resolved to cancel this project.

**4. Project Code I15-500032, Winston Well Redrill and Treatment
(CANCELLED)**

Q90. Please describe.

A90. This 2013 GRC approved project is now cancelled. California American Water concluded there was an unpredictable impact to the project and would not redrill the Winston well on-site. Since this site is no longer a viable solution for replacement of the Winston well, we plan to shift the water supply needs towards a well and treatment upgrade within the recently acquired East Pasadena service area where property is in the process of being acquired for well and treatment facilities. That property includes lots near the existing East Pasadena office. California American Water recommends the commission approve this transition of projects to continue to help pump allotted Raymond Basin rights and to help resolve a Division of Drinking Water Compliance Order for East Pasadena regarding meeting Maximum Day Demand with source water. The new project titled EP-Raymond Basin Replacement Well is further described in my testimony under I15-560003.

This project was to replace the Winston Well located at the Danford Reservoir Site and preliminary design was completed and permitting had begun. This project was delayed due

to San Gabriel County Water District (“SGCWD”) contesting the drilling of the well at this location as they had concerns it would influence or interfere with the production of one of their wells nearby. In the past, SGCWD re-drilled that well deeper and then rescinded SGCWD’s opposition to the Winston well project if the Winston well was relocated to the northeast side of the site. Therefore, plans were modified to place the well at the northeast side. The Winston well drilling was rebid and was expected to be drilled in late 2020. However, when the well drilling was submitted to the Raymond Basin Management Board, SGCWD renewed its opposition to the project. In this opposition, they expressed concern over loss of production and demanded to be compensated for any changes to their water quality. California American Water discussed the development of a Memorandum of Understanding for the Operation of the Winston well with SGCWD. However, after several meetings mutually acceptable language could not be reached. Due to the cost to install the well, it was determined that committing to reduce its flow or make other steps needed to eliminate any potential flow or water quality impacts was not appropriate and the project was cancelled.

5. Project Code I15-500036, Rehabilitate/Redrill Longden Well (CARRY-OVER)

Q91. Please describe.

A91. This 2013 GRC approved project is currently in the design and permitting phase for Reverse Osmosis (“RO”) treatment as the well is now offline and cannot be run due to contamination with multiple constituents.

Since the approval of the project, multiple treatment options have been considered and explored. In 2017 a recommendation was made by the American Water Corporate Innovation Group to pilot test a nitrate removal process called WellToDo. This process was marketed as a nitrate removal technique and as a significant advantage over Ion Exchange (“IX”), which requires frequent regeneration and costly waste disposal. A pilot

1 test plan for the WellToDo was prepared for this well and submitted to Department of
2 Drinking Water (“DDW”) in 2018. In January 2019, we learned that a similar WellToDo
3 pilot testing project by another public water system had not been successful, and that utility
4 abandoned further testing of the technology. Therefore, the pilot test was cancelled.

5
6 Over the last several years we conducted feasibility studies for other treatment options on
7 this well. One example is a new biological treatment technique for contaminated water.
8 This technique emerged and gained certification from DDW for the treatment of nitrate,
9 perchlorate, and Volatile Organic Compounds (“VOCs”), which are all present in the
10 Longden Well. While we evaluated the biological treatment and held permitting
11 discussions with SWRCB, we found the permitting challenges and space limitations were
12 too extensive and therefore did not move forward with this treatment technology.

13
14 This capital investment project was to address a deficit in the source of supply for the Los
15 Angeles County District’s San Marino service area. To minimize California American
16 Water’s reliance on costly purchased water from MWD, it was recommended that
17 California American Water should maximize production from the Longden Well through
18 treatment. This well is located adjacent to the Longden Reservoir on a small lot in a
19 residential area in the southern part of California American Water’s San Marino service
20 area in the Los Angeles County District. The well was drilled in 1924 and a well liner was
21 installed in the late 1990’s. The water from the well has nitrate concentrations as high as 70
22 mg/L (higher than the 45 mg/L MCL). The original pumping capacity of the Longden Well
23 prior to the presence of elevated nitrate concentrations was over 1,800 gpm. However,
24 since the water must be blended with other system water sources to maintain compliance
25 with nitrate limits, a smaller 960 gpm pump was installed in 1998 to address this issue. In
26 addition, booster pumps and an in-line static mixer were also installed in 1998 to facilitate
27 the blending.
28

1 Finally, it should be noted that in addition to elevated nitrate concentrations, perchlorate,
2 and tetrachloroethylene (“PCE”) concentrations have been increasing in the well. The
3 maximum concentration of perchlorate measured in the well was 4.0 µg/L which is below
4 but approaching the MCL of 6 µg/L. The maximum concentration of PCE measured in the
5 well was 9 µg/L, well above the 5 µg/L MCL.

6
7 **6. Project Code I15-500048, Arlington Well TCE Treatment (Project A-3,**
8 **Baldwin Hills) (CARRY-OVER)**

9 Q92. Please describe.

10 A92. This 2016 GRC approved project that began design in 2016 and started construction in
11 2018. On April 8, 2022, the Division of Drinking Water provided permit approval for the
12 project and plans for bringing the treatment system in service started. Completion of the
13 project is planned for the fall of 2022.

14
15 Project Background:

16 In February 2019 DDW approved the treatment construction drawings. Shortly after
17 receiving the DDW approval documentation, the City issued the building permit. Network
18 improvements were constructed to distribute the treated water back to the distribution
19 network. The treatment site construction was complete and initially scheduled for
20 operation in April 2021. An Operations and Maintenance Manual was submitted to the
21 Department of Drinking Water in May 2019. This manual is the basis of DDW’s review
22 and completion of the system Operating Permit Amendment. Remaining items on the
23 project are to disinfect the wells, pipelines, and treatment site vessels, test the wells, load,
24 and test the media, and place the systems into service.

25
26 This project addresses elevated and increasing levels of Trichloroethylene (“TCE”) that
27 have been detected in the Arlington Well, which had required blending and curtailed
28 production. Arlington Well is located on a large, fenced lot in a residential area on

1 Arlington Avenue. In April 2016 California American Water applied to the Water
2 Replenishment District's ("WRD") Safe Drinking Water Program to be considered for
3 \$1,600,000 in wellhead treatment grant funding for VOC removal at the Arlington Well. In
4 early 2018, the 48th Street Well was shut down due to VOC contamination. There is
5 existing piping that connects the 48th Street Well to the Arlington Well. Therefore, the
6 project was redesigned to include four GAC vessels, with two for each well site. A 2,300-
7 foot transmission main was designed to take the treated water back to the distribution
8 network. In May 2017, a National Pollutant Discharge Elimination System ("NPDES")
9 permit was issued for the site by the Los Angeles Regional Water Quality Control Board.
10 This permit is needed to backwash the filters into the storm sewer. A Conditional Use
11 Permit was received from the City of Los Angeles for this project in August 2017. The
12 project was bid for construction by WRD, with bids received in May 2018. The
13 construction contract, executed in July 2018, is held by WRD, with California American
14 Water responsible to reimburse WRD for payments made above the \$1,600,000 grant
15 amount.

16
17 **7. Project Code I15-500050, Patton Tank Replacement (Project B-x, San**
18 **Marino) (CARRY-OVER)**

19 Q93. Please describe.

20 A93. This previously approved 2013 GRC project received the City of Pasadena Planning
21 Department approval on December 21, 2021. It is currently in the design development
22 phase with construction planned for 2023.

23
24 Project Background:

25 This capital project concerns reconstruction of the Patton Tank. This tank is a 540,000
26 gallon partially buried concrete ground storage tank located in the Los Angeles County
27 District, specifically the San Marino Service area. California American Water engaged
28 TIC to perform inspection of the Patton Tank and prepare a report of the field evaluation

1 conducted. This report, dated February 14, 2013, recommended that with the anticipated
2 seismic and engineering concerns; the known safety, structural and sanitary issues; and the
3 age of the structure are all considered, tank replacement becomes the best long-term option
4 for meeting California American Water’s service requirements. This project began
5 preliminary design in 2019 and recently obtained a City of Pasadena Conditional Use
6 Permit in 2021. Design in 2022 is followed by construction in 2023. The current design is
7 expected to include additional storage for a total tank size of 940,000 gallons and site
8 improvements including additional screening of the tank.

9
10 **8. Project Code I15-500054, Chromium VI Water Treatment (CARRY-
11 OVER)**

12 Q94. Please describe.

13 A94. This 2019 GRC approved project is originally from Memo Account 1020-A, which the
14 Commission approved in December 2013. The respective treatment system construction
15 was completed in 2018 and is planned to be placed in service in 2022 as a pilot study per
16 Department of Drinking Water (“DDW”) recommendations.

17
18 Project Background:

19 This project consists of an Ion Exchange (“IX”) system for hexavalent chromium removal,
20 and a brine regeneration system. The project is in the Rosemead Operations yard and is
21 designed to treat water for hexavalent chromium from the Grand Well, which had
22 detections over the prior California MCL for hexavalent chromium. The project was
23 completed in 2018; however, during 2018, DDW noted their preference that chlorination be
24 added after the IX treatment, but before the onsite storage tank. Currently chlorination is
25 completed after the tank. It is common for IX treatment systems to provide water directly
26 into the distribution system with minimal chlorine contact time. Most wells do not pump
27 into storage tanks. As part of the completed Rosemead Tank and Booster Station
28 replacement project, chlorination is being located before entering the new storage tank.

Therefore, the IX treatment system in service date was delayed in order to resolve DDW's request that chlorination be completed prior to the storage tank.

This project is underway and substantially complete but awaiting initial testing and start up. The project is planned to be placed into service in late 2022 now that the Rosemead Reservoir Reconstruction and Booster Station (I15-500021) project is complete. The regeneration system for the hexavalent chromium removal system was performance tested in March 2022. Delays in the project are attributed to DDW's sustained multiple staff changes since California American Water submitted Operation and Maintenance Manual to DDW in October of 2017. DDW suspended their review during the construction of the Rosemead Reservoir and booster station. This review is part of the Permit Amendment process needed to place the system into service. After DDW cancelled their MCL implementation, there were project delays with the selected resin manufacture since Dow did not renew their NSF certification of their hexavalent chromium resin. An alternate resin made by Purolite was also pilot tested in 2015. This resin performed similarly to the Dow resin and pricing negotiations are underway to consider changing to this resin. Resin delivery and loading is the last step prior to the system being placed into service.

**9. Project Code I15-500058, Tier 4 Compliance – Standby Power
(CARRY-OVER)**

Q95. Please Describe:

A95. This previously approved 2016 GRC project includes the installation of 4 generators at Scott Booster Pump Station, Las Lomas Well and BPS, Encanto Well, and at Olympiad Booster Pump Station. Currently three of the sites have been installed and are in service except the Olympiad Booster Pump Station which is awaiting final permit approval from Los Angeles County Public Works prior to completing the project. The construction and installation of the Olympiad generator is planned to be completed in 2022.

Project Background:

Without a reliable source of back-up power, a prolonged electric outage would interrupt service for customers in some areas of the system. Subdivision 8 of Section III of General Order 103-A requires water utilities to have adequate redundancy and reliability for critical equipment.

The Los Angeles County District previously developed an emergency power generation plan that evaluated emergency power generators for the Baldwin Hills, Duarte, and San Marino distribution systems. This plan was based on historical anecdotal data showing that power interruptions would be limited in scope, due to localized electrical utility equipment failure or damage (e.g., transformer failures or downed power poles). It was also based on historical experience indicating that on-call employees could respond to after-hours emergencies from home to the corporate yard to retrieve an emergency power generator, and still timely mobilize to the affected facilities. Finally, the strategy was based on then-current understandings and interpretations on the applicability of air quality regulations to emergency power generators.

California American Water with Operations reviewed critical sites and developed four locations for permanent diesel-powered generators. These sites include Las Lomas Well and BPS, Encanto Well, Scott BPS and Olympiad BPS. This project began South Coast AQMD permitting process in 2019, with purchase of appropriate equipment and construction of concrete pads to begin at the end of 2020. Construction for the Las Lomas Well and BPS generator, Scott BPS generator and Encanto Generator in 2021. The remaining Olympiad PBS generator is currently awaiting final approval from Los Angeles County Public Works and is planned to be completed in 2022.

10. Project Code I15-500060, Rosemead Operations Center (CARRY-

1 **OVER)**

2 Q96. Please describe.

3 A96. This 2016 GRC approved project is currently in the design phase that started in October
4 2021. The construction of the new Rosemead Operations Center is planned for 2024-2025.

5
6 Project Background:

7 The existing Rosemead Operations site consists of several individual small buildings and a
8 trailer that are occupied by operations staff, engineering, customer service, conservation,
9 and external affairs employees. The original Rosemead office building was constructed in
10 1962, is presently in a severely deteriorated condition, and has a number of deficiencies,
11 including but not limited to: 1) inadequate restroom facilities for the number of employees
12 on site; 2) non ADA compliant restrooms; 3) unreliable and inefficient HVAC systems; 4)
13 insufficient office space for the number of employees 5) no break room or kitchen area for
14 employees to prepare or store edible items; 6) limited space for employees in common
15 areas such as the conference room; 7) does not have a fire protection sprinkler system; and
16 8) experiences a number of structure-related roof leaks as additions to the original building
17 have occurred over the years. It should also be recognized that a total of 15 office
18 employees report to the Rosemead office, and 25 field employees also report to the
19 Rosemead office daily since this location is where company vehicles are parked each night.
20 The Rosemead office building, through its attachment to the garage, contains an area for
21 storage of materials including meters, fittings, meter vaults, pipe, sand, aggregate base,
22 generators, and occasional plant equipment. Storage locations at the Rosemead office also
23 include document and record retention filing cabinets. Some of the files are currently
24 located in an old pump house and rented truck cargo container. Conservation supplies and
25 external affairs presentation equipment are also stored in the main building and the truck
26 cargo containers. It should also be noted that the trailer only has a temporary occupancy
27 permit from the City of Rosemead, and therefore is not considered for long-term use at this
28 time. Finally, the Rosemead site also has the following plant facilities on site including

Grand Well, Rosemead Well, Richardson Well # 3, Rosemead Reservoir, and Rosemead Boosters. Based upon the above-described deficiencies, California American Water recommends moving forward with a new operations building to replace the existing 54-year-old, deteriorated structure. The proposed project is expected to accommodate all employees in one central building, allowing for efficiencies and improved working conditions while also enhancing the overall operation and continuing to deliver excellent customer service. It is important to note that California American Water also expects to conduct a value engineering analysis during the design phase.

11. Project Code I15-500065, LA-Standby Generator Improvement Program (2021-2023) (ONGOING)

Q97. Please describe this program.

A97. This 2019 GRC approved program and implementation is planned in 2023. This program is intended to add generators to select sites across the Los Angeles County District. This capital project is regarding the installation of generators at sites within the Los Angeles County District to provide water service during power outages. This project is a continuation of the previous Tier 4 Compliance Standby Power project (I15-500058).

Project Background:

Subdivision 8 of Section III of General Order 103-A requires water utilities to have adequate redundancy and reliability for critical equipment. The Los Angeles County District previously developed an emergency power generation plan that evaluated emergency power generators for the Baldwin Hills, Duarte, and San Marino distribution systems. This plan was based on historical anecdotal data showing that power interruptions would be limited in scope, due to localized electrical utility equipment failure or damage (e.g., transformer failures or downed power poles). It was also based on historical experience indicating that on-call employees could respond to after-hours emergencies from home to the corporate yard to retrieve an emergency power generator, and still timely

1 mobilize to the affected facilities. Finally, the strategy was based on then-current
2 understandings and interpretations on the applicability of air quality regulations to
3 emergency power generators.

4
5 In the intervening years since this original emergency power generation strategy was
6 developed, several changes have occurred that require a change in emergency power
7 strategy. As part of its adaptation and resiliency efforts, California American Water must
8 prepare for a different type of power emergency than limited-scope equipment failures.
9 Recent wind events and wildfires, and the associated power utility and law enforcement
10 response, suggest that grid power losses have the potential to be much broader in scope,
11 longer in duration, and that utility workers might be denied access (or at a minimum have
12 access delayed) to critical water facilities due to natural forces or safety considerations. In
13 addition, the modern law enforcement response to emergencies calls for earlier and larger
14 evacuation areas, creating traffic congestion that can delay utility worker access to critical
15 water facilities. Moreover, as the population of the Los Angeles area has grown, peak
16 commute times have become longer, and vehicle congestion routinely occurs outside of
17 typical “peak commute” times. Population growth has also increased housing prices, and
18 more employees live farther into the suburbs than before. These circumstances,
19 individually and in combination, have increased the amount of time an on-call employee
20 needs to respond timely to after-hours power failures, making it infeasible to mobilize first
21 to the corporate yard, then to a distant distribution system. Finally, the South Coast Air
22 Quality Management District and the California Air Resources Board have issued
23 interpretations of various diesel generator regulations that restrict the ability of utilities to
24 store older equipment throughout the South Coast Air Basin at facilities that might require
25 emergency power generation. These circumstances combine to make a strategy that stores
26 all emergency power generators in a central location for mobilization to critical facilities
27 once an emergency has arisen both obsolete and ineffective, and at the same time limits
28

California American Water's ability to merely spread existing equipment amongst the three Los Angeles distribution systems.

Several sites have been identified and prioritized for addition of a permanent generator. The sizes of these generators depend on the site, and some sites are expected to need equipment to accommodate a permanent generator, such as electrical upgrades and transfer switches. This program is expected to allow California American Water to install generators at sites and aid in ensuring all pressure zones have the capability of supplying average day demands during a loss of power event.

**12. Project Code I15-500066, Main Replacement Program (2021-2023)
(ONGOING)**

Q98. Please describe this program.

A98. This program is a continuation of previously approved 2019 GRC Main Replacement Program. This program is intended to add or replace wells in the Los Angeles County District during the 2021-2023 timeframe. Currently, the project is in design and construction phases. The project includes the replacement of water mains at 13 locations within the three service areas of the Los Angeles County District. Design of the project on Business Center Drive started in July 2021 and construction immediately followed in November 2021. Construction of additional main replacements is expected to be complete by the end of 2023.

Project Background:

The 2019 Los Angeles County CPS and Buried Infrastructure CBA was prepared in part to assist California American Water to develop prioritized and planned asset upgrade and replacement programs. For water mains, the CBA asset categorization combines an assessment of likelihood of failure (based primarily on physical pipe characteristics as well as the frequency of reported repairs) and consequence of failure (based on factors including

a criticality analysis and population density) to assign an estimated priority to pipes. A series of parameters pertaining to both likelihood and failure and consequence of failure was established and scored. Per pipe, scores for likelihood of failure/consequence of failure were respectively summed to create a comprehensive likelihood and consequence of failure score. The total likelihood of failure and consequence of failure scores are respectively normalized for each system. These normalized scores were then assigned a risk level of 1 to 5, based on their location within a 5x5 matrix. Pipes with a risk level of 4 or 5 for both likelihood of failure and consequence of failure are flagged for replacement.

The total cost of pipe replacement is evaluated based on previous repair costs of each respective system. Systems with large replacement costs are discussed with operators to identify areas of concern, where quantitative data may have not been available.

Improvement projects to the service areas' mains are included in this annual main improvement/replacement program for efficient implementation throughout the service area. For example, if the CBA identified a main with a high likelihood and consequence of failure in an area the hydraulic model showed needed to be upsized to meet fire flow standards, a combined annual main improvement/replacement program enables California American Water operators to upsize the CBA-identified main instead of replacing with same-diameter pipe. In addition, areas exist where looping existing distribution mains would increase service reliability, foster better water quality, and improve pressures during high demand periods. Similarly, miscellaneous bottlenecks due to small pipe sizes should be relieved by increasing transmission main sizes at certain points.

California American Water's strategy is to continue programmatic investment to allow for the planned, prioritized, and regular replacement of the mains which have either been identified through the CBA or through hydraulic analysis of the systems. This includes pressure relief valves as needed to enable the new or replaced pipes to properly function.

Nearly 30 miles of pipe have been identified throughout the Los Angeles County District for replacement. Of that, about 23 miles were identified through hydraulic modeling as being necessary to meet fire protection standards and forecasted customer demands. An additional seven miles were identified as having a high likelihood of failure and consequence factors per the CBA. Improvements identified during the hydraulic analysis of the distribution systems and their expected benefits are summarized in each service area's Distribution and Storage section of the CPS. The results from the CBA analysis are provided in the CBA (Appendix V of the CPS).

13. Project Code I15-500067, Well Installation and Rehabilitation Program (2022-2023) (ONGOING)

Q99. Please describe.

A99. This 2019 GRC approved program is intended to add or replace wells in the Los Angeles County District during the 2022-2023 timeframe. Currently, the Crestfield site where the Santa Fe well was supposed to be redrilled is continuing as a project under this program that is currently in the design phase for drilling a new well. This well is now a new well and not a replacement well for Santa Fe well. The Crestfield site is expected to have a pilot well drilled at the location in 2022 and, if production and water quality are adequate, then design and construction of a new well is expected to occur at this location in 2023. This project assists in resolving the Duarte supply deficit mentioned in the 2019 Los Angeles County CPS. New well installation and/or replacement is needed throughout the Los Angeles County District to continue to meet current demands and projected increases in demands. New wells increase service area capacity and allow California American Water to continue to meet future demands. Replacement wells are expected to allow for abandonment of aging and/or contaminated wells, minimizing maintenance costs. Many of the existing wells in the Los Angeles County District are nearing or have already exceeded their 50-year service life and service area capacity has been decreasing over time. These aging wells exhibit low or decreased capacity due to contamination and decreasing

1 groundwater levels and require frequent rehabilitation or the addition of treatment facilities
2 to maintain their capacities. Many of these wells are inactive or producing at significantly
3 lower capacities than originally designed. New well construction methods result in higher
4 capacities at individual wells and allow more effective, less frequent rehabilitation. By
5 decreasing the overall number of wells in the service area while maintaining or increasing
6 service area capacity, California American Water can limit maintenance costs. When wells
7 with water quality issues are properly abandoned, these actions would prevent the need for
8 additional maintenance, treatment, and monitoring costs.

9
10 Of the 30 wells in the Los Angeles County District, 14 are over 50-years old. All three Los
11 Angeles County District service areas rely on groundwater to provide a significant portion
12 of their water supply. Having sufficient well production capacity helps California
13 American Water to meet average day demands, maximum day demands, peak hour
14 demands, and maximum fire flow standards.

15
16 In addition to age, water quality issues have rendered some wells to be inactive or
17 operating at lower capacities. To minimize maintenance/treatment costs and maintain
18 service area capacity, California American Water operators have identified wells with
19 water quality issues that may need to be replaced with a new well at a different site. It is
20 anticipated that even if wells are redrilled, treatment may be needed as known
21 contamination plumes are present in certain areas throughout Los Angeles County District,
22 especially in Baldwin Hills and San Marino service areas. To determine whether an
23 individual well should be abandoned or replaced under this program, the following should
24 be considered: age of the well, method of construction, historical records of rehabilitation
25 or repair (extent, frequency), video inspection of the structural condition of casing and/or
26 intake screen, specific capacity changes (decline and recovery), existing capacity, water
27 quality changes, sand production, site features (access, disposal facilities), and expected
28 cost and capacity of a new well.

Many wells have already been identified for replacement based on factors including but not limited to age, condition, and/or water quality. These recommendations have been developed in the 2019 Los Angeles CPS and in the Los Angeles Well Master Plan as a roadmap for future projects.

In summary, these aging wells in the Los Angeles County District require ongoing maintenance, rehabilitation, and replacement of above and below ground facilities to continue to provide safe and reliable water supply to California American Water customers. This well installation and replacement program is expected to help: 1) increase system reliability; 2) maintain system capacity; 3) avoid catastrophic failures; 4) minimize potential violations issued by the Division of Drinking Water; 5) extend the useful life of the well facilities; 6) improve operability; 7) improve site aesthetics; 8) improve site safety; 9) increase customer satisfaction; and, 10) decrease future unanticipated costs.

This program is identified as part of the 2019 Los Angeles County CPS and the Los Angeles Well Master Plan completed in 2022.

14. Project Code I15-500068, SCADA Maintenance and Improvements Plan (2021-2023) (ONGOING)

Q100. Please describe this program.

A100. This 2019 GRC approved project is currently in construction. This IP upgrades four (4) PRV sites in the Duarte system so they can be integrated, monitored, and controlled through the SCADA system. The project includes the installation of electric service and electronic valves at each site. Improvements at the Winston Ave., Royal Oaks, and Starpine PRVs were completed in April 2022. Improvements at the Buena Vista PRV are pending due to easement issues. This project is expected to be complete by the end of 2023. SCADA can provide for remote operation as well as real-time recording of well water levels, flow rate, residual chlorine, and pressure. This information is necessary to make

1 decisions on operations, maintenance, and supply adequacy. It also allows California
2 American Water to maintain and enhance water system reliability. A comprehensive and
3 well-maintained SCADA system allows for more effective system control, monitoring,
4 record keeping, and system diagnosis. Of particular benefit is monitoring of the production
5 wells California American Water owns and maintains within the Los Angeles County
6 District.

7
8 California American Water has already invested in SCADA equipment to provide better
9 monitoring and control of California American Water facilities throughout the Los Angeles
10 County District. However, SCADA equipment has a short lifetime, and most equipment
11 must be replaced in a five to fifteen-year span. To maintain the existing SCADA system,
12 continued replacement, maintenance, and updates of SCADA systems and equipment must
13 be performed.

14
15 California American Water plans to develop a SCADA Master Plan in the Los Angeles
16 County District. The goals of this Master Plan are to establish a clear vision and
17 governance of the SCADA system, provide reliable communication to all sites, make the
18 SCADA system a priority source for system data, and establish an automation and
19 equipment upgrade program. This is expected to enable California American Water to
20 make continued investments efficiently and effectively in SCADA as the equipment has a
21 finite life and requires ongoing maintenance and replacement. California American Water
22 has already made progress in this program by developing an automation study proposal
23 (2018) for the Los Angeles County District.

24
25 Once a SCADA Master Plan is developed, California American Water should make
26 equipment and automation upgrades to sustain its existing SCADA infrastructure via a
27 programmatic annual investment. In 2022, automation upgrades are planned at several
28 facilities. Beyond 2022, regular upgrades identified in the SCADA Master Plan should be

implemented. Further information on this program can be found in the 2019 Los Angeles County CPS and Los Angeles SCADA Master Plan.

15. Project Code I15-500069, Pump Station and PRV Rehabilitation Program (2021-2023) (ONGOING)

Q101. Please describe this program.

A101. This 2019 GRC approved project is expected to start design in 2022 and construction in 2023. Bids were received in April 2022 for the design of the Las Lomas Booster Pump Station that is expected to begin design in May of 2022. California American Water has 16 booster pump stations within the Los Angeles County District, of which one was built in 2015 and 15 were built between 1935 and 1997. As part of the 2019 Los Angeles County CPS, analyses were performed for each of the booster pump stations' ability to provide adequate service. The system pumping capacity analysis looked specifically at the service area's ability to meet peak hour demands and fire flow standards. Projects were identified for this program through both this analysis and discussions with California American Water operators.

In addition to the hydraulic analysis in the CPS, the 2019 Los Angeles County Pump Station CBA included an analysis of the condition of 10 of the pump station facilities; the other six facilities already had pending capital improvement projects or were recently rehabilitated. The objective of the assessment was to evaluate the operating and existing conditions of the booster pump stations and identify opportunities for rehabilitation. The proposed project recommendations were assessed via a desktop analysis where all available data from the records provided by California American Water was tabulated to assess the age and performance of the facilities. Hydraulic model results and a physical site evaluation of the facilities to document the current state of all process equipment, electrical, and overall site condition were also considered in the analysis. The identified improvements include full rehabilitation of the process mechanical equipment such as

valves, supports, meters, pumps, motors, etc. Also evaluated were structural and environmental improvements on items such as the housing structure of the pumps, asphalt, concrete, electrical equipment, and SCADA instrumentation. Projects were identified through this analysis including the Angeles Mesa Booster Pump Station, Las Lomas Booster Pump Station, Vineyard Booster Pump Station, Danford Booster Pump Station, Lamanda Pump Station, Patton Pump Station, and Monterey Booster Pump Station. Although not included in the site evaluations, three additional pump stations were identified that are expected to need upgrades in the near term. These include Spinks, Longden, and Brookridge.

**16. Project Code I15-500070, Well Rehabilitation Program (2021-2023)
(ONGOING)**

Q102. Please describe this program.

A102. This 2019 GRC approved program is the initiation of a program to maintain the wells in the Los Angeles County District. To continue providing a reliable supply, California American Water proposes to rehabilitate well facilities, including rehabilitation, maintenance, and replacement of well components. This project is currently in the planning stages. A Well Comprehensive Planning Study was finalized in April 2022. Since well rehabilitation often includes pump and motor replacements, as wells experience a failure of a pump or motor, at that time the Well CPS is typically consulted to determine if the well could benefit from rehabilitation. If rehabilitation is warranted, the well would typically be video-logged, and a final determination would be made on the best course of action to rehabilitate the well. Well rehabilitation projects are intended to increase system reliability, maintain system capacity, avoid catastrophic failures, extend the useful life of the well facilities, improve operability, improve site safety, increase customer satisfaction, and decrease future unanticipated costs associated with rapid failure.

17. Project Code I15-500071, Tank Rehabilitation and Seismic Upgrades

Program (2021-2023) (ONGOING)

Q103. Please describe this program.

A103. This 2019 GRC approved program is intended to maintain and replace the storage tanks in the Los Angeles County District. Storage tanks allow the four service areas (Baldwin Hills, Duarte, East Pasadena, and San Marino) to meet DDW requirements in meeting MDD and PHD. In addition, the service areas are recommended to have the supply capacity and storage to meet fire flow demands during MDD conditions. By maintaining the tanks, California American Water maintains essential storage to allow peak demands to be met without the need to develop additional source of supply capacity.

A series of tank assessments have been conducted over the past decade by TIC. Additionally, seismic upgrades were studied in a Tank Seismic Assessment. The tanks throughout the Los Angeles County District were evaluated by Richard Brady & Associates Inc. The study determined the need and priority for seismic upgrades in addition to storage upgrades resulting from reduced tank operating heights necessary to meet current seismic codes. The recommendations from the study include replacement of Patton Reservoir, which is already in the design process for replacement, Danford Reservoir, Oak Knoll, and East Pasadena Tanks 2A and 2B.

Rehabilitation or replacement of the storage tanks in the Los Angeles County District is expected to be beneficial in extending the service lives of the tanks. Following the tank maintenance and rehabilitation schedule helps to ensure that the tanks are available as reliable sources of water storage and supply. A proactive approach to rehabilitation is also expected to help identify existing or potential problems with the storage tanks. Making seismic upgrades are expected to help protect the tanks in the case of a seismic event. This program is identified as part of the 2019 Los Angeles County CPS.

18. Project Code I15-500073, Tank Replacement Program (2021-2023)

(ONGOING)

Q104. Please describe this program.

A104. This 2019 GRC approved program is intended to construct new tanks in the Los Angeles County District. The program is expected to begin design in 2022 with construction occurring in 2023 and continuing into the next GRC. The Los Angeles County District is required by DDW to have enough source capacity to always meet MDD and the ability to meet four hours of PHD using a combination of source of supply capacity and storage facilities. Due to their age and condition, the Starpine Reservoir, Danford Reservoir, Oak Knoll Reservoir, and Angeles Mesa Tank should be replaced to ensure adequate water supply reliability. This is expected to allow California American Water to maintain essential storage to allow peak demands to be met without the need to develop additional source of supply capacity.

The Angeles Mesa Tank is a 3.7-million-gallon (“MG”) concrete tank in the Baldwin Hills service area and was installed in 1932. It is in poor condition and although recent repairs have fixed major leaks, the general condition of the tank is poor. Reconstruction of a new tank at this location is expected to be problematic given that the site is surrounded by residential homes so building a tank within the existing tank may be the preferred option for this site.

The Oak Knoll Reservoir is a 2.5 MG partially buried concrete tank in the San Marino service area. This project was previously approved for rehabilitation but has been requested to be evaluated as a part of the Tank Seismic Assessments project. It was installed in 1916 and requires replacement.

The Danford Reservoir is a 2.0 MG partially buried concrete and earthen berm tank in the San Marino service area. It was installed in 1912.

1 The Starpine Reservoir is a 0.34 MG steel tank in the Duarte service area and was built in
2 1997. This reservoir is too small to meet projected customer demands and fire flow
3 requirements and should be upsized to 1.0 MG. It should be noted that adequate space for a
4 larger tank may be cumbersome at the existing site and that alternative tank locations will
5 need to be investigated as a part of this project.

6
7 Once the tank seismic assessments are completed in 2022, California American Water
8 plans to begin replacing these tanks starting with the highest risk tank identified in the
9 seismic assessments and the regular TIC tank assessments. Design for the first replacement
10 is expected to occur in 2022, with construction expected to begin also in 2022 (as time and
11 budget allows) and continuing into 2023. Also, in 2023 design and construction for the next
12 tank should begin.

13
14 This program is identified as part of the 2019 Los Angeles County District CPS.

15
16 **C. Ventura County District Previously Approved Carry-over and Ongoing**
17 **Projects**

18 **1. Project Code I15-510017 (IP-0551-88), Connect 12" Main between**
19 **Hillcrest and Lawrence Drive (CARRY-OVER)**

20 Q105. Please describe.

21 A105. This 2016 GRC approved project started in 2021 with the design phase and is scheduled to
22 be constructed in 2022. This previously approved carry-over capital investment project
23 includes the installation of approximately 780 feet of new 12-inch main between Hillcrest
24 and Lawrence Drive. This project is scheduled for construction in 2022 depending on
25 resolution of easements through existing properties. Currently we are utilizing GPR ground
26 penetrating radar to confirm the alignment of the existing water main.

27
28 Project Background:

1 The main extension is needed to connect the western section of the Thousand Oaks system
2 to the southeastern part to improve water quality, pressure, and fire flow. This main is one
3 of the key arteries supplying water to the industrial and commercial customers along the
4 West Hillcrest Drive corridor. Likewise, the southeastern part of the system has been
5 subject to several new commercial developments, including a recently constructed
6 shopping center at the southeastern part of the U.S. Highway 101 and Borchard Road
7 interchange. This project is expected to improve water circulation, fire flow capacities, and
8 overall water quality in the western part of the Thousand Oaks system.

9
10 **2. Project Code I15-510028, Replace 1,400 Feet of 10-inch Main to Las**
11 **Posas Tanks (CANCELLED).**

12 Q106. Please describe.

13 A106. This 2016 GRC approved project is now cancelled. The project is cancelled because an
14 easement could not be acquired from a developer where the proposed water main alignment
15 was planned to be installed. Several meetings and site visits were conducted, but the
16 developer was unwilling to come to terms on providing an easement.

17
18 Project Background:

19 This project relates to the replacement of approximately 1,400 linear feet of 10-inch
20 diameter asbestos-cement pipe that spans a canyon between the Las Posas tanks and Old
21 Coach Drive within the Las Posas satellite system in the Ventura County District service
22 area. Construction design plans are currently estimated at 30 percent. Due to road access
23 elevations, the project has changed from just a pipeline to a pipeline, small booster station,
24 and electrical conduit extension. These design changes resulted in increased estimated cost
25 for construction.

26
27 There was a severe water main break on an adjacent section of this 10-inch diameter pipe
28 which resulted in significant damage to an adjoining hillside. Although California

American Water believes the main break was caused by work performed by a third party, it shows the potential risk associated with a 50-year-old, 10-inch diameter asbestos-cement pipe that traverses across a canyon that is only accessible by foot. It is recommended that the existing asbestos-cement pipe be replaced through the installation of a new High-Density Polyethylene pipe via horizontal directional drill near the existing pipe route. This project would establish a structurally sound, joint-less pipe that should require little-to-no maintenance over its life, with the main benefit of reducing a significant risk in the system related to the consequences of failure associated with this pipeline in a difficult-to-repair area. Currently, the project is at a standstill with a developer regarding obtaining an easement. The terms that the developer is requesting are too high and in addition they have not been willing to negotiate or help. Therefore, California American Water no longer expects to proceed with this project and will cancel it. During the next CPS Comprehensive Planning Study further investigations are expected to be made to investigate any alternatives for this project.

3. Project Code I15-510030, Upgrade Springwood Booster Station (CARRY-OVER)

Q107. Please describe.

A107. This 2013 GRC approved project started in November 2017 and at this time, the project is targeted for completion by end of 2022. The preliminary phase of the project began toward the end of 2017 and is nearing 60 percent design. The implementation phase is estimated to start by the fall of 2022. The project completion has been delayed due to design delays attributed to finding an appropriate location for the permanent emergency generator in accordance with City and Fire Code requirements. Alternative site locations are currently under investigation. The location for the generator is limited and California American Water is currently seeking easement or property acquisition options. During the hydraulic analysis of the Springwood Zone, the design consultant discovered the existing discharge piping is not adequately sized for the 1,000-gpm fire protection. The booster pump station

1 is expected to be designed for a future high flow pump for fire protection and installed after
2 the discharging piping is upgraded as a separate project. A permanent emergency generator
3 is being considered for the site to provide fire protection during wildfire events when
4 electrical utilities de-energize. The booster pump station would have the ability to provide
5 fire protection during critical wildfire events. The design consultant is currently
6 recommending two inline booster pumps with variable frequency drives sized for a low
7 upstream system head based on hydraulic analysis that are expected to provide redundancy.
8 This investment project also includes the replacement of antiquated electrical equipment,
9 new permanent emergency generator, and complete SCADA integration.

10
11 This station was originally constructed in 1988 and has had major electrical equipment
12 rehabilitation and numerous motor replacements. A CBA was prepared in conjunction with
13 the 2012 Ventura County District CPS, which identified several deficiencies. These
14 deficiencies include pumps that are nearing the end of their useful life, the existing pumps
15 operate at constant speed, the existing pump controls are aging, and the motors fail
16 frequently. This investment project recommends the replacement of the pumps with
17 variable speed controllers and inverter duty rated motors.

18
19 **4. Project Code I15-510032, Replace White Stallion Domestic Booster**
20 **Station (CARRY-OVER)**

21 Q108. Please describe.

22 A108. This 2013 GRC approved project is currently under construction and is targeted to be
23 completed in Summer 2022. The preliminary phase of this project began towards the end
24 of 2017. The design was completed in October 2019 and the project construction
25 documents were released to bidders in October 2019. Construction bids were received in
26 December 2019 and were significantly higher than the engineer's construction cost
27 estimate.
28

1 Project Background:

2
3 The high flow pump was required for meeting fire flow protection for the service area
4 which necessitated an electrical service upgrade to be installed at the site. Construction
5 was delayed for Southern California Edison to obtain an easement and to complete design
6 of electrical service upgrade that consisted of 560-ft of 5-inch buried conduit to be installed
7 and transformer upgrade. An unforeseen water main realignment was required during
8 construction to maintain clearance between the 5-inch buried conduit electrical service
9 upgrade and existing 10-inch water main on the access road to the site. Construction began
10 in October 2021 and construction is estimated to be completed in Summer 2022. The total
11 estimated cost to completion is anticipated to be over the previously approved, carry-over
12 amount. The additional cost can be attributed to delays in construction related to the
13 Southern California Edison electrical service upgrade, water main realignment for SCE
14 electrical service upgrade, material cost escalations, arborist services for trenching nearby
15 customer owned tree, adding a chlorine analyzer, and bedrock removal.

16
17 This station was originally constructed in 1991 and has had only one renewal (motor on
18 one pump). A CBA was prepared in conjunction with the 2012 Ventura County District
19 CPS, which identified several deficiencies at this facility. These deficiencies include
20 pumps nearing replacement age, available pumping capacity is marginal to meet peak hour
21 demand, and there is no fire pumping capacity. This project includes the replacement of
22 the White Stallion Domestic pump station, as well as the installation of two adequately
23 sized pumps (approximately 150 gpm each) to meet peak hour demand. In addition, a
24 1,000-gpm high flow pump is required to provide 1,000 gpm of fire protection. The main
25 benefit of this project would be improved system reliability for the White Stallion
26 Domestic gradient.

The final design included vertical, inline multistage pumps with variable frequency drives based on system demand hydraulic analysis and site space constraints. This investment project also includes the replacement of antiquated electrical equipment, installation of a permanent emergency generator, chlorine analyzer and complete SCADA integration.

**5. Project Code I15-510033, Upgrade Wildwood Booster Station
(CARRY-OVER)**

Q109. Please describe.

A109. This 2013 GRC approved project is currently under construction and is targeted to be completed in Summer 2022. The preliminary phase of this project began towards the end of 2017. In November 2019, proposals were received to fabricate the new booster pump station, then detailed design from the prefabricated pump station vendor was received to complete the design in April 2021. Construction bids were received in July 2021 and construction began in November 2021.

The upgrade of the Wildwood Booster Station includes a prefabricated booster pump station containing three above grade end suction pumps. This investment project also includes the replacement of antiquated electrical equipment, installation of a permanent emergency generator, pavement replacement, security fence & gate replacement, sewer lateral installation for floor drain in prefabricated building, fire hydrant relocation and complete SCADA integration following successful startup of the new pump station and the demolition of the existing one. The delays to the construction are due to the City of Thousand Oaks permit review process.

6. Project Code I15-510040, Tier 4 Compliance/Standby Power (CARRY-OVER)

Q110. Please describe.

A110. This 2016 GRC approved project started in 2021 with the design phase and is scheduled to be constructed in 2022. It was determined after conversations with consultants that lower Tier engines already permitted would be grandfathered under the higher Tier 4 engines requirement. The consultant also determined the Tier 4 requirement only applied to portable generators and Tier 3 applies to permanent standby generators. Two sites were identified as critical for emergency standby power based on previous history with losing power due to Public Safety Power Shutoffs and proximity to wildfire prone areas where fire protection is essential. Portable generators take too long to start-up and place employees in harm's way when road closures and traffic congestion are encountered during evacuation. The recommended solution is to install diesel permanent emergency generators including a fuel storage tank with secondary containment as required for diesel, automatic transfer switch, electrical conduit, generator pad, and complete SCADA integration for reliable operation of the existing sites. This project began in September 2021 with a design-build approach to install an emergency standby generator for Los Robles Booster Station including design, sound study report, permitting and construction. The emergency standby generator for Mayfield Booster Station is expected to include construction under this project.

**7. Project Code I15-510042, SCADA Maintenance and Improvements
Program (2021-2023) (ONGOING)**

Q111. Please describe this program.

A111. This previously approved 2019 GRC ongoing project has not started but is targeted to be completed in 2023. The recommended projects are expected to be pulled from the 2022 Ventura SCADA Master Plan.

Project Background:

The existing SCADA equipment in California American Water's Ventura County District does not allow for the continuous monitoring and control of the entire water system due to

1 the age and condition of the equipment. Replacing and automating SCADA equipment is
2 expected to reduce the overall risk and consequences associated with system failures in the
3 system, including avoiding equipment shutdowns, maintaining 24/7 service to customers,
4 and providing accurate data collection. Maintaining a robust SCADA system is crucial for
5 California American Water to continue to deliver a high level of service to customers.

6
7 Many of the facility locations require updated data collection, transmitter, SCADA system
8 connections, and automated operation upgrades to integrate fully into the existing SCADA
9 system. In 2022, California American Water plans to implement automation upgrades at
10 tank, turnout, and pump station sites. Also in 2022, California American Water completed a
11 SCADA Master Plan which identifies the specific needs of each facility in the system. This
12 Plan prioritizes necessary equipment replacements and upgrades for sites across the
13 Ventura County District. The Master plan developed an itemized replacement list of
14 SCADA related components at sites including flow meters, pressure transducers, SCADA
15 cabinets, batteries, Uninterruptable Power Supply (“UPS”), antennae, fans, and cellular
16 radios.

17
18 **8. Project Code I15-510043, Springwood Gradient Main Replacement**
19 **(CARRY-OVER)**

20 Q112. Please describe.

21 A112. This 2019 GRC approved project has not started and is scheduled to begin design in 2022
22 with construction targeted to be completed in 2023.

23
24 Project Background:

25 This project is for Springwood Gradient Main Replacement in the Ventura County District.
26 This investment project includes upgrading 1,600 linear feet of 4-inch PVC pipe and 1,300
27 linear feet of 6-inch AC pipe that is located on the discharge side of the Springwood BPS
28 and connecting the mains at the intersection of Kenwood Court and Corine Hill Court to

1 the Springwood Gradient. The mains are undersized to meet the current fire flow
2 requirements by Ventura County Fire Department. This was further confirmed during the
3 design of the Springwood BPS Upgrade (I15-510030) which includes installation of a high
4 flow pump that would be restricted due to the water main size in the Springwood Gradient
5 Main Replacement project. The existing 6-inch AC mains along Kenwood Court and
6 Corrine Hill Court (located in the Main Gradient and immediately adjacent to the
7 Springwood Gradient) dead-end at individual cul-de-sacs with deficient fire flows and low
8 pressures. These mains are located at higher elevations served by the Main Gradient. Due
9 to their proximity to a higher-pressure gradient, these mains can be connected to the
10 Springwood Gradient. The upgrades include installation of approximately 2,900 linear feet
11 of new 8-inch main. The benefits include reducing a significant risk in the system related
12 to the consequences of failure associated with this pipeline following construction of the
13 Springwood BPS and the lack of adequate main capacity.

14
15 **9. Project Code I15-510044, Los Robles Zone PRVs (CARRY-OVER)**

16 Q113. Please describe.

17 A113. This 2019 GRC approved project has not started and is scheduled to begin design in the
18 Summer of 2022 and construction is targeted to be completed by end of 2023.

19
20 Project Background:

21 As explained in testimony for the 2019 GRC and repeated here for reference and
22 convenience, this project is for Los Robles PRVs in the Ventura County District. This
23 investment project is expected to improve the low pressure and low fire flow capacity as
24 well as a low water supply reliability condition that exists at the southern part of the
25 Gainsborough hydraulic gradient. Portions of the Los Robles Gradient experience high
26 pressures and the project is expected to lower the pressure to the service area to minimize
27 line breaks. Conversely, the Greenmeadow Gradient experiences low pressures but is
28

1 located immediately adjacent to the Los Robles Gradient. The project is expected to
2 increase pressures by connecting the Greenmeadow Gradient to the Los Robles Gradient.

3
4 The hydraulic model indicates high system pressures in the Los Robles Gradient.
5 Customers have individual PRVs to control pressure that were installed when the homes
6 were built. The Greenmeadow BPS formerly increased pressures into the Greenmeadow
7 Gradient but has been inactive for several years. The Greenmeadow BPS would be retired
8 from service. The Greenmeadow Gradient is currently served by the Main Gradient via
9 three check valves at reduced pressures.

10
11 The recommended solution is to reduce pressure in the Los Robles Gradient by installing
12 two PRVs on Iverness Road and Pinecrest Road, which would isolate the line pressure
13 from the BPS and tank. Installation of approximately 500 linear feet of new 8-inch main
14 from the 6-inch main on Green Moor Place to the 12-inch main on South Moorpark Road is
15 needed to connect the Greenmeadow Gradient to the Los Robles Gradient. A PRV is also
16 recommended to further reduce pressures into the Greenmeadow Gradient. If the
17 Greenmeadow BPS is abandoned, the PRV can be installed within the BPS vault. This
18 project was bid to three design firms in early June 2022.

19
20 **10. Project Code I15-510045, St. Charles Oaks Apartment Main**
21 **Replacement (CARRY-OVER)**

22 Q114. Please describe.

23 A114. This 2019 GRC approved project has not started and is scheduled to begin design in 2022
24 and construction is targeted to be completed in 2023.

25
26 Project Background:

27 As explained in testimony for the 2019 GRC and repeated here for reference and
28 convenience, this project is for St. Charles Oaks Apartment in the Ventura County District.

This capital investment project is expected to improve system pressures and fire flows in the St. Charles Oaks Apartment area. Approximately 1,000 linear feet of 4-inch AC pipe provides a fire loop around the St. Charles Oaks apartment complex and is connected to the 6-inch PVC main on St. Charles Drive.

It was determined that the existing 4-inch AC main loop at the St. Charles Oaks Apartment building is undersized and requires replacement to avoid main breaks and to provide adequate fire flow and pressure. This project consists of replacing the existing 4-inch main (fire loop) with new 8-inch main (fire loop). This is expected to decrease head loss in the main, improving available fire flows. Additionally, it is expected to increase the reliability of the main which is prone to breaks as it is not sized to accommodate high flow.

11. Project Code I15-510054, Tank Rehabilitation and Seismic Upgrades Program (2021-2023) (ONGOING)

Q115. Please describe this program.

A115. This 2019 GRC approved program has not started but is expected to begin in 2022 and is targeted to be completed in 2023. Water is stored in a combination of twenty (20) steel and concrete tanks throughout the Ventura County District Service area. California American Water conducts inspections on the interior and exterior of the existing storage tanks to continually monitor the critical assets. Recent tank inspections have resulted in rehabilitation recommendations. This investment program is for completion of rehabilitation and seismic upgrades identified by TIC based on previous tank inspections.

The 2019 Ventura County District CPS estimated that seismic upgrades that are expected to be needed and recommended completion of a tank seismic study. This study is underway and is expected to be completed in 2022. The results of the study are expected to include a prioritized list of recommendations to bring each tank into conformance with current seismic codes.

**12. Project Code I15-510056 (formerly I15-510041), Pump Station
Replacement and Rehabilitation Program (2021-2023) (ONGOING)**

Q116. Please describe this program.

A116. This 2019 GRC approved program is for the replacement and rehabilitation of pump stations. Work on five pump stations identified in the 2018 Ventura County CPS began in 2021. Request for proposals were solicited in 2021 to replace Deer Valley, American Oaks, and Dewey Pump Stations including Dos Vientos and Dos Vientos Zone 3 Pump Stations Generator Installations. Six proposals were received, and Valentine Environmental Engineers was selected as the best value proposal. The designs for Dos Vientos Zone 3 and Dos Vientos Pump Stations Generator Installations are expected to be completed in the Summer of 2022 with construction completed by end of 2022. The designs to replace Deer Valley, American Oaks and Dewey Pump Stations are expected to be completed by end of 2022 and construction to begin in 2023. The construction to replace American Oaks and Dewey Pump Stations is expected to be coordinated with the Scale SGIP project (I15-510041).

California American Water completed an assessment of the booster pump stations in the 2019 Ventura County District CPS. The physical condition and age of pump station equipment and components can affect a pump station's reliability and associated maintenance costs. Additionally, poor physical condition can create safety concerns or hazards. A desktop assessment identified the most critical pump stations, those that were either old or had known deficiencies. These critical pump stations were then selected for a more in-depth site evaluation. Of the 20 pump stations in the Ventura County District, seven were chosen for the detailed analysis. Specific needs identified at these pump stations include:

- I. Pipes connecting the distribution system to the pump stations require replacement due to leaks at taps and pump connections;

- 1 II. Pump and pipe supports are corroded and require replacement;
- 2 III. Pump stations require permanent flow meters;
- 3 IV. Electrical switchgear, equipment (MCC and MDS), switches, conduit, and fittings
- 4 are deteriorating and require replacement;
- 5 V. Backup generators are required for reliable operation, particularly during wildfire
- 6 and Santa Ana wind events where electrical utilities de-energize their power lines;
- 7 and
- 8 VI. Portable generators should be replaced with permanent generators as the portable
- 9 ones take too long to start-up and place employees in harm's way when road
- 10 closures and traffic congestion are encountered during evacuation.
- 11

12 The considerable number and severity of deficiencies coupled with the age of the pump

13 station structures and pumps makes a pump station a candidate for replacement and/or

14 rehabilitation.

15

16 **D. Monterey County District Previously Approved Carry-over and Ongoing**

17 **Projects**

18 **1. Project Code I15-400097, Interconnect RR, HH, Bishop (CARRY-**

19 **OVER)**

20 Q117. Please describe.

21 A117. This 2013 GRC approved project interconnects four of the Central Division water systems.

22 The Ryan Ranch and Bishop portions of the project were completed in December 2020.

23 The project includes the installation of 5900 feet of 8" transmission main. It connects the

24 Main Monterey System to the Bishop System. The pipeline is routed through the Ryan

25 Ranch Business Park along Ragsdale Drive, Lower Ragsdale Drive, Wilson Drive and Blue

26 Larkspur Drive.

27

28

1 This project addresses the long-term water supply capacity needed to meet current and
2 future demands. The Ryan Ranch, Hidden Hills, and Bishop service areas share an overall
3 allocation from the Laguna Seca Sub-Basin of the Seaside Basin Aquifer. The Ryan Ranch
4 System is supplied by three wells, the Bishop System is supplied by two wells and the
5 Hidden Hills service area is supplied by one active well. All the Laguna Seca System wells
6 are located within the Seaside Basin Aquifer. Based upon the outcome of the Seaside Basin
7 Aquifer adjudication, the allocation from this aquifer for these satellite systems is zero.

8
9 The Hidden Hills portion of the project is expected to address current water supply
10 challenges with the Hidden Hills System by Interconnecting it to the Monterey Main
11 System. The original scope for this project consisted of connecting the Hidden Hills
12 System to the Monterey Main System through the two pump station upgrades and installing
13 1200 feet of new pipeline in Tierra Grande Road. It would have also required installing
14 2800 feet of 6-inch pipeline through private property and an easement along the entire
15 pipeline. Early correspondence with the property owner indicated a cost of approximately
16 \$88 sq. ft. for the easement. The project would also have required some piping and valving
17 upgrades at the Stirrup Tank site to keep customers in service on one side of the system.
18 This route is limited because it only connects the Monterey Main system to the Hidden
19 Hills system. Work completed to date for this scope includes design and bidding for the
20 upgrades along Tierra Grande Road and coordination with the electrical utility. A new
21 scope for this project has been evaluated which consists of a pipeline along Highway 68
22 from the Bishop System to the Hidden Hills System. This option involves adding one new
23 pump stations and approximately 8,700 feet of piping to connect the Bishop system (which
24 is already connected to the Monterey Main system) to the Hidden Hills system. The new
25 pump station would be located on California American Water property at the old Bishop
26 Water Treatment Plant (“WTP”) site. This new pump station would pump to the existing
27 Hidden Hills WTP Clear Well. From there, an existing pump station will boost flow to the
28 Stirrup Tank, which feeds the Hidden Hills system. Because of the connection to the

Hidden Hills System, this scope has an added operational benefit of connecting the Monterey Main System to the Toro System. Because of the added operational benefits and not expecting an extensive and expensive easement with the proposed alignment, California American Water proposes to implement the Highway 68 pipeline option.

2. Project Code I15-400108, Standby Power/Emergency Generators (CARRY-OVER)

Q118. Please describe.

A118. This project was approved in the 2016 GRC and provides for increased system resiliency and reliability during power outages and shutoffs for sites that do not have back up power. Generators installed and completed as part of this project include stationary generators at Chualar well and pump site, Encina Pumping Plant, Eardley Pumping Plant, Mesa Pumping Plant, Ord Grove Treatment Plant, Garrapata Filter Plant. Two portable generators were purchased to be used throughout the Division. Additional stationary generators at Huckleberry Pump Station and Upper Estrella d'Oro Pump Station are scheduled for replacement by 2023.

Without a reliable source of back-up power, a prolonged electric outage would interrupt service for customers in some areas of the system. California American Water has historically and expects to continue to utilize a few portable trailer mounted generators to provide back-up power at easily accessible and less critical facilities. In 2019, PG&E identified issues with their electrical grid, necessitating a review of critical infrastructure that would need to be supported on generator power in the event of a Public Safety Power Shutoff ("PSPS").

Under the PSPS Memo Account additional work was completed for this project which includes the installation of Automatic Transfer Switches ("ATS") at various sites throughout the system, 15 sites have new ATS completed to date and approximately 20

1 sites remain and are expected to have ATS installed under the memo account by the end of
2 2023.

3
4 **3. Project Code I15-400109, Los Padres Dam Facilities Improvements**
5 **(CARRY-OVER)**

6 Q119. Please describe.

7 A119. This project was approved in the 2016 GRC. California American Water owns and
8 operates Los Padres Dam (“LPD”) along the Carmel River. The LPD was built in 1949
9 and is designed with mechanical valves to safely operate the dam. In 2015, California
10 American Water hired a consultant to perform a mechanical assessment of the dam’s
11 valves. The assessment was based on documents obtained from California American
12 Water and the Division of Safety of Dams (“DSOD”) and on a site inspection held on
13 November 20, 2015, with DSOD and interviews with California American Water
14 personnel. The assessment identifies recommendations for improvements, the highest
15 priorities include replacing the outlet valves and outlet structure. To safely operate the dam
16 and minimize risk to the dam’s operation, these improvements are being implemented
17 starting with the highest priority recommendations.

18
19 A preliminary design for these improvements was completed in 2018. In May of 2019, a
20 landslide occurred in the slope above the LPD reservoir, resulting in burying the dam’s
21 underwater outlet valve. As a result, a new underwater outlet needs to be designed and
22 installed. The underwater outlet must be replaced first to isolate flow to the downstream
23 outlet and valves. DSOD has requested that the permit application for replacing the
24 underwater outlet valve include the replacement of the downstream outlet valves described
25 in this project. Final design for the valve replacement is 60% complete. Valves are
26 scheduled to be installed in 2023, after the underwater outlet is replaced. The schedule for
27 this project has been extended to submit the design to DSOD for approval in conjunction
28 with the LPD Outlet Modifications project I15-400152. The work described in this project

is expected to occur between 2022-2023. Scope of work to address future LPD needs is expected to continue with project I15-400156 through 2024-2026.

4. Project Code I15-400110, Phase 1 BIRP Improvements (CARRY-OVER)

Q120. Please describe.

A120. This 2016 GRC approved project was expanded in scope of work to include additional improvements that are necessary for operation and performance of this water treatment plant. Phase 1 design has been finalized and old air process piping, and appurtenances have been removed. Additional critical work identified and completed during Phase 1 included replacement of Sludge Pond #3 reclaim pumps and floating decanter, replacement of the 24-inch effluent pipeline and installation of sodium hypochlorite feed pumps, control panel, and process piping. Other additional work included epoxy coating of the air scour and blowdown piping, design and construction of caustic feed pump improvements, and construction of a safety platform necessary to access sodium hypochlorite injectors have been completed. A thorough inspection and testing of the Anthracite and Greensand media (filter media) for all 18 active filter banks was completed and resulted in the replacement of all filter media.

The most immediate needs are being funded in Phase 1, followed by a Phase 2 project covering the remainder of the required improvements.

The Phase 1 improvements are expected to continue with construction scheduled to be completed in 2022. The major project improvements for Phase 1 include retrofitting new air process piping, air process valves, air blower, new instrumentation, and programming filter sequences.

1 **5. Project Code I15-400117, Los Padres Dam DSOD (CARRY-OVER)**

2 Q121. Please describe.

3 A121. This 2019 GRC approved project to improve the Los Padres Dam (“LPD”) and its
4 respective facilities. California American Water owns and operates LPD along the Carmel
5 River. The LPD was built in 1949. The DSOD conducts annual inspections of the LPD.

6
7 In its last two annual inspections of the LPD, the DSOD has required improvements to the
8 dam and its facilities, which include a more accurate measurement of downstream seepage,
9 repair of the reservoir outlet valve, and erosion protection of the downstream outlet valves.
10 In May 2017 DSOD sent a letter to California American Water requiring a structural and
11 hydraulic assessment of the existing dam spillway. During the 2017 and 2018 inspections,
12 DSOD required a small, eroded section on the dam crest to be repaired.

13
14 The status of these items is as follows. The dam crest repair was completed in 2019. The
15 seepage improvements were completed in 2020. The reservoir outlet valve was unable to
16 be repaired due to a landslide that occurred in May of 2019. A design to relocate and
17 replace the valve is underway and is expected to be complete in 2022, after which said
18 design would be submitted for permitting. Construction is estimated to begin in the fall of
19 2022 or summer of 2023 based on permitting schedule. That project is expected to be
20 completed under a different capital project. DSOD indicated that the erosion protection of
21 the downstream valves could be postponed if California American Water monitor the
22 condition and address securing the valves when the valves are replaced as part of the I15-
23 400109 LPD Facility Improvements Project. The spillway condition assessment is
24 complete and has been submitted to DSOD. DSOD informed California American Water in
25 2021 that DSOD will be providing comments requiring an additional assessment.
26 Comments were received in early 2022. California American Water has contracted with a
27 design firm to address these additional comments. The final assessment is expected to be
28 complete by the end of 2022. The assessment would then be submitted to the DSOD for

consideration as to which improvements would be required. These improvements are needed to safely operate the dam and minimize risk to the dam's operation.

The additional spillway assessment requirements are expected to result in an increased budget to continue the assessment of this project. Also, the budget for this project increased due to a flood inundation study required by DSOD and included in this project.

6. Project Code I15-400122, Los Padres Dam NMFS MOA Requirements (CARRY-OVER)

Q122. Please describe.

A122. This 2019 GRC approved project addresses stipulated activities in the 2017 Memorandum of Agreement with the National Marine Fisheries Service ("NMFS"). California American Water owns and operates LPD along the Carmel River. The LPD was built in 1949. California American Water has identified the MPWSP as its prop project for a long-term water supply to replace unauthorized diversions from the Carmel Valley Aquifer and to reduce reliance upon and protect against overdraft of the Seaside Groundwater Basin. In order to minimize the effects resulting from its ongoing water operations including ongoing water diversions, pending completion of the MPWSP, California American Water entered into a memorandum of agreement ("MOA") with the NMFS in 2017. The MOA stipulates certain requirements pertaining to the LPD and management of steelhead in the Carmel River.

To date the following activities have been completed under this project:

Partial completion of a feasibility study to investigate long-term alternatives for Los Padres Dam, which include dam removal, do nothing option, and expanding reservoir capacity from current conditions. This study is co-funded with the Monterey Peninsula Water Management District ("MPWMD"). The study includes the evaluation of options for

1 permanent unimpeded upstream and downstream fish passage and the management of
2 sediment if LPD is left in place. This study is estimated to be complete by the end of 2022.

3
4 Other MOA requirements that have been completed include Annual payments to the
5 Coastal Conservancy for habitat restoration activities, funding for a pit tagging program for
6 previous years and for an annual report of pit tagging activities, improvements to the
7 existing fish trap ladder, gravel replenishment activities in 2019 and 2021, and an
8 assessment of roads within the LPD property.

9
10 Future improvements as part of this project include additional upstream fish trap
11 improvements, fish screen improvements to the reservoir outlet pipe once the outlet pipe is
12 relocated, improvements to the floating weir downstream collector and future studies
13 required by NMFS. The MOA stipulates that NMFS may request additional studies to the
14 long-term alternative study if necessary to better inform the decision in which long term
15 alternatives should be pursued. One additional study requested by NMFS is a continuation
16 of the NMFS science center's annual pit tagging study along the Carmel River.

17
18 **7. Project Code I15-400125, Main Replacement Program (2021-2023)**
19 **(ONGOING)**

20 Q123. Please describe this program.

21 A123. This project was approved in the 2019 GRC. The Central Division has approximately 630
22 miles of water main in its distribution system. A large percentage of this pipe is nearing the
23 end of its expected useful life. Much of this pipe has a smaller diameter than current
24 standards and therefore impedes the ability of the system to deliver adequate fire flow; this
25 pipe is also experiencing a higher rate of breaks and leaks, leading to water loss and
26 disruption to customers. In 2019, California American Water completed a Buried
27 Infrastructure CBA and a CPS that included development of a detailed hydraulic model of
28 the distribution system. A risk score was calculated for each pipe segment based on its

1 physical condition, leak history, and hydraulic constraints (such as the ability to deliver
2 recommended fire flow amounts). Based on these risk scores, several main replacement
3 projects were recommended for inclusion in this program. The CBA identified 22 miles of
4 main for replacement, as well as 10,500 feet for abandonment and 24,000 feet for lining to
5 mitigate water age issues.

6
7 This capital IP consists of a series of planned main replacement activities to maintain the
8 performance and reliability of the Central Division distribution system as well as
9 unplanned main replacements that were coordinated with City pavement rehabilitation
10 projects along various streets. As of the date this testimony was prepared, six separate main
11 replacement projects have been completed, which include Echo Avenue, Lower Lighthouse
12 Avenue, Kimball Avenue, Del Monte Avenue, Ocean View Boulevard, Mesa & Trevis
13 Way, and Viejo Road, and Spruance Road Main Replacements. Moving forward for 2022
14 and 2023 we have identified the following projects to be completed:

- 15
16 a. Project BA-105: Helvic Avenue in Monterey
17 b. Project BA-107: De El Rio Road in Carmel Valley
18 c. Project BA-109: Beacon Avenue in Pacific Grove
19 d. Project BA-260: 2nd & 4th Street in Monterey
20 e. Project BA-226: Dolores Main Replacement in Carmel
21 f. Highway 1 Carmel River FREE Bridge Crossing in Coordination with Monterey
22 County

23
24 The proposed funding for 2021-2023 is intended to address portions of the highest priority
25 areas identified in the CBA. This scope of work is expected to continue with IP 15-400157
26 through 2024-2026.

27
28 **8. Project Code I15-400126, Fire Protection Program (2021-2023)**

(ONGOING)

Q124. Please describe this program.

A124. This project was approved in the 2019 GRC. In 2019, California American Water completed a CPS that included development of a detailed hydraulic model of the distribution system. The model was used to evaluate available fire flow and storage volume throughout the system. There are several pressure zones in the Central Division that do not have the pumping capacity and/or storage capacity to provide the recommended fire flow. The Central Division continues to implement upgrades to increase the system's ability to deliver water for firefighting. California American Water has historically worked with a Fire Flow Task Force consisting of representatives from the fire protection agencies that serve the area. This Task Force reviews the recommended improvements and helps prioritize the projects to be implemented each year.

At the beginning of 2021, California American Water in coordination with the Fire Flow Task Force and with public requests determined to install an 8-inch diameter main in Upper Walden/Peter Pan Road (approximately 1,500 feet in length). This project was also a high priority due to aging infrastructure as well as firefighting needs because the pipe is undersized based on current standards. As a result, design started in 2021 and construction was completed in 2022.

California American Water plans to continue to work with a task force of representatives from local fire protection agencies to prioritize and coordinate improvement projects to increase the system's ability to provide fire flow. Upgrading the booster pumps and/or storage tanks is expected to provide improved system reliability for satisfying peak demands and fire flows. Higher available fire protection is expected to be provided during maximum demand periods. Preliminary cost estimates for the various recommended improvements are based upon construction of similar projects in Monterey, but these

estimates are expected to require additional development for the specific site conditions.
This scope of work is expected to continue with IP 15-400158 through 2024-2026.

9. Project Code I15-400127, Pump Station Rehabilitation Program (2021-2023) (ONGOING)

Q125. Please describe this program.

A125. This project was previously approved by the Commission in the 2019 GRC. This project is expected to allow California American Water to continue to maintain its fleet of booster pumping stations within the Central Division. The Carmel Woods Booster Station replacement is under design. The electrical service has been relocated and upgraded. The new pump station is expected to be a prefabricated station similar to previous stations installed in California American Water's central division. Upon completion of design, the project is expected to be bid for construction. Project is estimated to be completed by the end of 2022.

Also, design for the following four booster stations is underway: Dry Creek Booster Station, Del Mesa Booster Station, Lower Airways Booster Station. and the Corona Booster Station Improvements. For the Corona Booster Station Improvements project, California American Water is awaiting permitting approval by the California Department of Transportation. Depending on timing of permitting approval, the Corona station may be built in the 2024-2026 booster station program. The three remaining stations listed are scheduled for construction in 2022-2023.

The Central Division has 145 booster pumps that compose the 70 booster pump stations. Ongoing rehabilitation is required to ensure that the booster stations remain reliable and avoid costly failures. Also, many of the pumps and some of the stations have reached or are nearing the end of their useful life. The stations range in age from 5 to 89 years old, and the average age of the stations is roughly 49 years. In order to evaluate the needs of the

project, California American Water prepared the 2019 Booster Pump Station CBA as part of the CPS effort.

The goal of the CPS (and corresponding CBAs on infrastructure and booster stations) was to identify and prioritize capital improvement projects necessary to ensure the Central Division can safely, adequately, and reliably distribute water to meet current and projected water demands. The booster station CBA included a detailed analysis of 14 pumping stations and evaluated various components such as: site conditions, structural conditions, process equipment, piping and valves, heating and ventilation systems, instrumentation and control systems, electrical systems, standby power, fire, and safety. The remaining stations were evaluated through a desktop assessment that evaluated pump and pump station service-life, pump efficiency, hydraulic capacity, and power outage reliability.

The selection of booster stations for this project is expected to be prioritized during the project. The sequence of implementation of these sites is expected to be evaluated and made based on schedule requirements and subject to easement considerations and/or relocations.

Additional project costs are expected due to a more expensive building enclosure for the Carmel Woods Pump Station.

This program was identified in the 2019 Monterey County CPS, specifically in the Booster Pump Station CBA. This scope of work is expected to continue with the 2024-2026 Booster Station Program I15-400159.

**10. Project Code I15-400128, SCADA Maintenance and Improvements
Program (2021-2023) (ONGOING)**

Q126. Please describe this program.

1 A126. This investment program is a continuation of the program approved by the Commission in
2 the 2019 GRC for ongoing replacement of SCADA equipment within the Central Division.

3
4 Work completed includes, Panetta Well #1 and #2 had controls consolidated to one PLC
5 and motor controls were upgraded to VFDs. Also, the chlorine pump and analyzer were
6 replaced with a newer model. The instrumentation was replaced due to age, this includes
7 the pressure transducer and flow meters. Water level transducers were added to the well to
8 monitor the well water level on SCADA.

9
10 Garza Well #3 had the controls upgraded and motor control upgraded to a VFD. A water
11 well level transducer was added for SCADA monitoring. Chlorine pump, analyzer and
12 pressure transducer were replaced, the flow meter is still in good shape and was not
13 replaced.

14
15 Garza Well #4 had the controls upgraded and motor control upgraded to a VFD. A water
16 well level transducer was added for SCADA monitoring. The chlorine pump, analyzer,
17 flow meter and pressure transducer were replaced.

18
19 Los Laureles Well #5 had the controls upgraded. A water well level transducer was added
20 for SCADA monitoring. The chlorine pump, analyzer, chemical shed, flow meter and
21 pressure transducer were replaced.

22
23 Los Laureles Well #6 had the controls upgraded and motor control upgraded to a VFD. A
24 water well level transducer was added for SCADA monitoring. The chlorine pump,
25 analyzer, and pressure transducer were replaced. The flow meter was not replaced due to
26 condition and age.

Cell modem upgrades for the Monterey system are well underway. These are expected to enable the use of FirstNet band on AT&T cellular network which is expected to maintain communication during catastrophic events.

These upgrades are expected to allow California American Water to better monitor the distribution system for potential water loss, excessive energy use, and low system pressures. Upgrades are also expected to allow California American Water to identify potential concerns, such as low tank levels, and allow for adjustments to be made quickly and remotely without requiring operators to have to visit remote sites. This is expected to reduce the risk to worker safety by reducing worker exposure to field conditions.

An upgraded SCADA system is expected to improve system reliability and quality of service, reduce the risk of service disruptions, replace obsolete systems that have reached the end of their useful lives and improve operational efficiency. This scope of work is expected to continue with IP- I15-400160.

11. Project Code I15-400129, Tank Rehabilitation Program (2021-2023) (ONGOING)

Q127. Please describe this program.

A127. This project was approved in the 2019 GRC. The following work has been completed under this program, Pebble Beach Tank #2, Presidio Tank #1, and Carola Tank #1 were rehabilitated in 2020. Hilby Tank #1 and #2, and Ranchitos Tank #1 were rehabilitated in 2021. Upper Airways Tank and Fairways Tank #1, #2, and #3 are projected to be completed in 2022. Storage tanks in the Central Division require maintenance in order to remain in proper working condition and ensure safe and reliable service to California American Water customers. A consulting firm has completed inspections on all tanks in the system and has provided a schedule for upgrades and painting. The tank rehabilitation work is expected to continue with IP number I15-400161 in the 2024 through 2026 GRC.

1 The Central Division has approximately 100 storage tank facilities to help provide adequate
2 supply of water to customers. These storage facilities are critical for supplying water
3 during peak demand periods and for fire protection. Ongoing rehabilitation is required to
4 ensure that the storage facilities remain reliable and costly failures can be avoided. Some of
5 the issues that occur as the tanks age include corrosion or surface damage of the tank
6 surface or the connecting piping. Additionally, required upgrades to inspection access
7 hatches allows for continued monitoring and assessment. It is recommended that the
8 Central Division perform tank upgrades, painting, and maintenance in accordance with the
9 schedule from TIC and that California American Water continue to perform seismic
10 upgrades at critical storage tanks in coordination with rehabilitation projects that are
11 identified on the basis of age and current condition.

12
13 **12. Project Code I15-400131, Well Rehabilitation Program (2021-2023)**
14 **(ONGOING)**

15 Q128. Please describe this program.

16 A128. This program, approved by the Commission in the 2019 GRC, is a continuation of the
17 previously approved Well Rehabilitation Program I15-400123. The wells throughout the
18 Central Division require ongoing maintenance, rehabilitation, and replacement (at existing
19 or new locations as required) of above and below ground facilities to continue to provide
20 safe and reliable service to customers. It is also important to highlight another critical
21 benefit of this on-going project: by ensuring the reliability of the various wells located
22 within the Carmel Valley aquifer, California American Water can fully utilize these wells
23 during times of excess flows in the Carmel River. In this fashion, California American
24 Water can obtain the maximum possible diversion of water (under our allowable water
25 rights) to be treated, transferred, and injected into the Seaside Basin for aquifer storage and
26 recovery purposes.

California American Water completed a CPS for the Central Division in 2019. The CPS included an evaluation of current and projected future demands, as well as an evaluation of available supplies. The Central Division currently operates 36 active wells as its source of supply. There are 14 wells located in the Carmel River Alluvial Aquifer, seven wells located in the City of Seaside, four wells in the city of Sand City, which supply the brackish water desalination plant, with the rest distributed throughout the satellite systems (11 wells in Bishop, Ambler, Toro, Ralph Lane, Ryan Ranch, Hidden Hills, Garrapata, and Chualar). To establish the predicted well maintenance frequency, these wells are broken down into two general categories based on the type of installed pump: submersible or line-shaft turbine. Due to the unpredictable nature of individual well conditions, which cannot be determined until a well is examined, a decision on rehabilitation versus needing to drill a new well is expected to be made only after the well has been surveyed.

In 2021 and 2022, rehabilitation was completed on Ambler Oaks Well and Garrapata Wells #1 and #2. Additionally, the Toro Well #3 was demolished. Preventative Maintenance was performed on all Upper Carmel Valley wells to maximize the ability to store winter rainfall using ASR. Additionally, efforts to increase production from the Carmel Valley River up to the allowable limit are proceeding as recommended under project I15-400106 in the form of a well replacement at Schulte well site and initial planning at Rancho Canada well site.

In 2022 and 2023, a new Sand City Desal source water well is being designed and constructed in order to improve supply and reliability for the desalination plant in Sand City. Currently, the project includes the addition of one production well with the option to include 2 additional production wells if deemed necessary. This Scope of work is expected to continue with IP number I15-400162 in the 2024-2026 GRC.

13. Project Code I15-400133, Phase 2 BIRP Improvements (CARRY-

OVER)

Q129. Please describe.

A129. This project was approved in the 2019 GRC and continues the work started under Phase I (project code I15-400110). Critical deficiencies identified and addressed during design of Phase 1 have delayed implementation of Phase 2. The Phase 2 improvements include replacement of the motor operated valves (56 valves), a retrofit of the return Backwash Pond #3, a new air lift/mixing system for Pond #3, electrical and mechanical building for air lift/mixing process, upgraded instrumentation, new smaller chemical feed pumps for summer mode operations, and leak detection & improvements to double containment systems for bulk storage and delivery of chemicals. These upgrades are necessary for continued reliable operation of the plant. Design and construction of the Phase 2 improvements started in early 2022 with completion of work estimated to occur by the end of 2023. There are expected to be periods of overlap for Phase 1 & Phase 2 construction. Two vital additions to the scope of work have been identified since the project was first proposed in 2019; backwash pond covers and replacement of the bulk sodium hydroxide storage tank. To maximize the amount of water processed by the facility, the treatment plant reclaims water from the outdoor backwash ponds. Audits by DDW identified the ponds as a potential source of contaminants associated with wildlife and surface runoff. Pond coverings have been added to the scope and budget for this project to correct this deficiency. Specifically, the scope of work includes the design and construction of a physical barrier along the perimeter of the ponds to prevent surface runoff from entering the ponds and the construction of a covering for the ponds to prevent animals from entering the ponds and reduce algal blooms which interfere with the treatment process. The existing sodium hydroxide bulk storage tank is original to the construction of the treatment plant and is manufactured of carbon steel. Recent inspections have shown corrosion to the tank and its associated appurtenances. The scope of work includes evaluating options to replace the bulk storage tank with a new tank constructed of polyethylene.

1 **14. Project Code I15-400135, Arc Flash Mitigation (CARRY-OVER)**

2 Q130. Please describe.

3 A130. This project was approved in the 2019 GRC. The project addresses arc flash deficiencies
4 in the Central Division by improving safety for employees and contractors working on
5 electrical equipment. This work is expected to improve system reliability and quality of
6 service, reduce the risk of service disruptions, and improve operational efficiency.

7 California American Water has completed Arc-Flash mitigation on 53 sites.

8
9 The National Fire Protection Agency (“NFPA”) Code, released in 1995, was the first
10 edition to address arc flash as a hazard. This edition also introduced the arc flash protection
11 boundary and established the concept of “approach limits.” According to the Institute of
12 Electric and Electronics Engineers and NFPA, “Each year, 2,000 workers are admitted to
13 burn centers for extended injury treatment caused by arc flash.”

14
15 California American Water followed the NFPA 2006 Edition. However, the NFPA 2012
16 Edition increased the arc flash labeling requirements. The new labeling requirements
17 require the incident energy and the required Personal Protective Equipment (“PPE”) to be
18 displayed. The existing warning labels at California American Water facilities do not
19 comply with these new labeling requirements.

20
21 By 2017, California American Water completed arc flash studies for all its facilities. As a
22 result of those studies, numerous facilities were found to have incident energy too great for
23 employees or contractors to work safely on equipment at those facilities. Currently, there
24 are four levels of incident energy (levels 1-4). American Water determined that level 4 was
25 the highest level that it would expose its employees to, provided employees were equipped
26 with the appropriate level of PPE. Any electrical enclosure with an incident energy greater
27 than level 4 would be labeled as such and employees would not be allowed to work on that
28 equipment, while energized.

Working with electrical equipment, particularly when troubleshooting, requires that the absence of power be verified. This is nearly impossible when electrical enclosures are closed. Therefore, this project provides for external verification test ports to be installed outside the electrical enclosures.

This project reduces the incident energy at certain sites to a safe working level. As an example, installation of sensors to the main breaker can accomplish this. Upon sensing an abnormal inrush of power, these sensors are expected to trip the main breaker reducing the incident energy, limiting damage to the equipment, and reducing the risk of injury to operators or service personnel.

15. Project Code I15-400136, Ambler Water Treatment Solids Residual Handling (CARRY-OVER)

Q131. Please describe.

A131. This project was previously approved in the 2019 GRC. The Ambler Water Treatment Plant includes a backwash waste recovery system in which recovered backwash water is recycled to the head of the plant. Settled solids are transferred from the four reclaim tanks to sludge holding tanks and then transported off-site for disposal on a regular basis. The sludge contains a high-water content as there is currently no method for de-watering the sludge; therefore, this method of residuals handling and disposal involves a high operational cost.

In order to address the high operational and maintenance cost, California American Water intends to install a dewatering system such as a thickening tank or other system which would lower the residuals handling costs by decreasing the volume of water to be off-hauled. The project is scheduled for completion by the end of 2023.

1 **16. Project Code I15-400137, Del Rey Regulating Station (CARRY-OVER)**

2 Q132. Please describe.

3 A132. This project was previously approved in the 2019 GRC. The project is scheduled to begin
4 in 2022 and be complete in 2025.

5
6 The existing Del Rey Regulating Station is located in an underground vault under Highway
7 218 in the City of Del Rey Oaks, CA. The access hatch is immediately adjacent to the
8 travel lane. Entering the vault requires confined space entry to access the valves.
9 Operations staff are exposed to traffic along the highway when accessing the vault. This
10 regulating station contains valves that control the flow of water from the Crest tank to the
11 ASR wells in Seaside, CA.

12
13 The recommended solution is to relocate the regulating station to an above- or below-
14 ground structure outside of Highway 218. The project is also expected to evaluate
15 opportunities to consolidate control functions currently provided at valves outside the
16 existing vault (referred to as 111 Valve, 112 Valve, and Bypass Valve). This project would
17 increase safety for operations staff and for the public traveling along Highway 218. It
18 would streamline operations and allow more efficient flow control during ASR operations.

19
20 Costs for this project have increased due to the need to secure additional property for an
21 expanded or relocated building and updated building, piping, valving and electrical costs
22 based on a recently installed similar building.

23
24 **17. Project Code I15-400138, Rancho Fiesta Tanks and Pump Station**
25 **(CARRY-OVER)**

26 Q133. Please describe.

27 A133. This project was approved in the 2019 GRC. Work is expected to begin in 2022 and is
28 scheduled to be completed in 2024.

Two pressure zones provide water service to the Rancho Fiesta area along Oak Meadow Lane. The Lower Rancho Fiesta Pump Station (“PP #61”) pumps water from the Lower Carmel Valley zone up to the Lower Rancho Fiesta Tank. The Lower Rancho Fiesta tank has a relatively small volume (10,000 gallons) and was originally constructed by repurposing a railroad tanker car. It is located along Oak Meadow Lane in a sensitive viewshed. The Upper Rancho Fiesta Pump Station (“PP #62”) is located next to the Lower Rancho Fiesta Tank and pumps up to the Upper Rancho Fiesta Tank. The Upper Rancho Fiesta Tank is a partially buried rectangular concrete tank with a volume of 70,000 gallons.

PP #62 Pump Station and both tanks are nearing the end of their design lives, and both zones (Lower Rancho Fiesta and Upper Rancho Fiesta) have deficiencies in emergency reserves and in meeting fire flow targets. PP #61 Pump Station piping and electrical equipment was upgraded in 2013. The 2013 Monterey County CPS recommended increasing the volume of the Lower Rancho Fiesta Tank and increasing the pumping capacity of PP #62. It has since been determined that it is not possible to increase the volume of this tank due to the size of the tank site and its location in a sensitive viewshed. California American Water initiated improvements at PP#62 that included new electrical and SCADA equipment. Those improvements were completed but the pumping capacity and the storage volume have not yet been addressed.

Due to site limitations at the Lower Rancho Fiesta and Upper Rancho Fiesta tank sites, the following solution is recommended:

Construct a bypass with a flow control valve to allow water from the Upper Rancho Fiesta Zone to drain into the Lower Rancho Fiesta Tank during an emergency such as a fire.

Construct a new underground tank to replace the Lower Rancho Fiesta Tank; the volume would be similar to the existing tank, but its main function would be to provide suction to

1 PP#62. The existing tank (the railroad tanker car) would be removed or abandoned in place
2 and construct a new 120,000-gallon tank at the Upper Rancho Fiesta Tank site. This tank
3 would provide emergency and fire storage for the Upper Rancho Fiesta Zone, and with the
4 emergency bypass, this volume could also provide emergency and fire storage for the
5 Lower Rancho Fiesta Zone. The tank would be buried or partially buried to reduce the
6 visual impact.

7
8 In addition to providing fire flow and emergency supplies in the Rancho Fiesta area, this
9 project would address two aging storage tanks and would increase system reliability,
10 eliminate maintenance issues associated with the use of an abandoned rail tanker car for
11 storage, improve site aesthetics, and improve site safety.

12
13 Costs for this project have increased due to the need to purchase additional easements for
14 the increased tank footprint and expected higher costs for buried tank installations.

15
16 This project was identified in the 2019 Monterey County CPS.

17
18 **18. Project Code I15-400140, Standby Generator Improvement Program**
19 **(2021-2023) (ONGOING)**

20 Q134. Please describe this program.

21 A134. This project was approved in the 2019 GRC. The service goals of California American
22 Water include the ability to at least supply average day demands at all times. The Central
23 Division has approximately 70 booster pump stations, some of which pump into zones with
24 only a hydropneumatic tank or with no storage tank at all. These zones would lose water
25 pressure almost immediately upon the loss of power to the pump station. Additionally, the
26 Central Division has a number of wells and treatment facilities that are critical to the
27 adequate supply of water to customers. This program includes the installation of new
28 permanent generators as well as the installation of connection points to allow California

American Water staff to connect temporary portable generators during a power outage. Of the five sites that were identified as high priority in the 2019 CPS for new generators (PP81, PP91, PP2A, PP54, and Cypress), two generators, one at PP2A and one at PP54 were installed in 2021. Going forward, generators are expected to be installed as they were prioritized per the CPS and Emergency Power Study. Generators are expected to provide backup power which is expected to allow California American Water to deliver water and maintain pressure in the distribution system, protecting public health.

Due to PG&E's PSPS events, California American Water identified critical infrastructure that would need generator support in the case of a power outage. This resulted in reprioritization of generator needs. Scope of work is expected to continue with IP number I15-400163 in 2024 through 2026.

**19. Project Code I15-400141, New Carmel Valley Well (2021-2022)
(CARRY-OVER)**

Q135. Please describe.

A135. This Project was approved in the 2019 GRC and consists of constructing a new well in the Lower Carmel Valley on the Rancho Canada Golf Course. Current work for this project consists of investigating the need for additional CEQA documentation and the drilling of a preliminary borehole. Well design and permitting are expected to be completed in 2022, with a goal of having the well-constructed and in service in 2025 or sooner. The well is anticipated to have production capacity of approximately 1,250 to 2,000 gpm.

In 2021, the Rancho Canada Village Project was approved by the County of Monterey, signifying the kickoff of the design phase of this project. In order to maximize supplies from Carmel River water rights, including the ASR Program. California American Water needs to be able to pump additional groundwater from Lower Carmel Valley during the wet winter months for storage in the Seaside Aquifer. If California American Water is not able

1 to pump this groundwater from the Lower Carmel Valley during winter months, then the
2 amount of water injected into the ASR system during the wet winter months could be less
3 than the desired withdrawal amounts during summer months. This could lead to a storage
4 deficit in the Seaside Basin and a shortfall in California American Water's ability to meet
5 summer demands.

6
7 Several of the existing wells in Lower Carmel Valley are declining in production capacity
8 and nearing the end of their useful lives. California American Water needs to replace this
9 production capacity to fully implement the ASR program and replacing several smaller
10 wells with a few larger-capacity wells would improve efficiency and lower the cost of
11 system operations.

12
13 **20. Project Code I15-400143, Forest Lake Pump Station (CARRY-OVER)**

14 Q136. Please describe.

15 A136. This project was approved in the 2019 GRC. The project is currently under construction.
16 California American Water has completed the design, environmental review and permitting
17 for this project and has initiated construction for the new Forest Lake pump station. This
18 project is located on the site of the existing Forest Lake storage tanks in Pebble Beach.
19 Construction started on this project in September of 2021 and completion is estimated to be
20 in July of 2022. This project was identified in the 2019 Monterey County CPS. The Forest
21 Lake Pump Station is designed to increase the HGL in the transmission mains served by the
22 Forest Lake storage tanks. It is necessary to increase the pressures to overcome some low-
23 pressure occurrences that exist in high points in the transmission mains. This condition is
24 exacerbated when water levels in the tanks drop and can result in low fire flow conditions
25 and water quality issues. There are four high spots in Carmel where the pressure in this
26 pipeline can drop below 20 psi, the normal lower operating limit for pipelines without
27 customer service connections. California American Water has performed hydraulic
28 modeling of this pipeline to evaluate the extent and severity of the low pressures.

California American Water also installed field data loggers during February and March of 2019 to measure pressure over an extended period. Data from the model runs and the data loggers showed pressures as low as 4 psi during this test period. These conditions were observed while the water level in the Forest Lake Tanks was approximately 18 feet, or slightly more than half full. If the level in the tanks were 10 feet lower, which can occur during some conditions, the gauge pressure in the pipeline would have dropped to 0 psi. These pressures are extremely low and can lead to damage to the pipeline or the connecting valves and fixtures. The low pressures in this portion of the pipeline contributes to the low available fire flow in portions of Carmel. The low pressures can also lead to water quality contamination events if backflow devices are not working properly.

E. Monterey County Wastewater District Previously Approved Carry-over and Ongoing IP

**1. Project Code I15-420003, Las Palmas MBBR Installation
(CANCELLED)**

Q137. Please describe.

A137. This project is cancelled. After further investigation, implementation of this project is not feasible without significant cost and interruption to the treatment plant. California American Water expects to look into other treatment options in the future.

The Las Palmas Ranch Wastewater Treatment Plant (“WWTP”) currently serves the Las Palmas Ranch residential development. The WWTP consists of two separate treatment trains or plants, referred to as Plant 1 and Plant 2; Plant 1 was put into service in 1989 and was followed by Plant 2 in 1996. Plants 1 and 2 share an influent screening facility and the flow is split to each plant after influent screening. Each plant is equipped with an influent equalization basin, two primary clarifiers, three stage trickling filter/secondary clarifiers, final clarifier, denitrification tank (with crossflow media) and dual media pressure filters.

1 The Plant 1 trickling filter tanks are not structurally sound. The tank walls have bowed and
2 there are visible cracks. The tanks have been repaired in locations. Operations staff is no
3 longer allowed to enter the top of the tanks to maintain the equipment/media due to the
4 structural issues with the tanks. The condition of the tanks poses a significant safety issue
5 at the facility. The tanks are installed within a building and the tanks cannot be removed
6 unless modifications are made to the building.

7
8 In July 2015, Valentine Environmental Engineers provided an alternatives analysis for
9 retrofit options for Plant 1 so that the issue with the trickling filter tanks could be
10 addressed. Valentine reviewed the existing process data, existing treatment systems and
11 consulted with reputable process equipment manufacturers to determine retrofit options for
12 the WWTP - Plant 1. The retrofit options consider the required effluent quality and
13 capabilities of the existing process equipment and tanks, among other factors such as cost,
14 time, and operability. The preferred alternative was to retrofit Plant 1 to a Moving Bed
15 Bioreactor (“MBBR”) process. In 2019, California American Water tasked Valentine with
16 updating the conceptual cost estimate for this option.

17
18 **2. Project Code I15-420004, Spreckels Blvd. Main Replacement**
19 **(CARRYOVER)**

20 Q138. Please describe.

21 A138. This 2019 GRC approved project is expected to be designed in 2022. Construction of the
22 project is expected to be delayed until a future rate case.

23
24 The gravity main in Spreckels Boulevard is in poor condition and needs replacement. The
25 existing main material is vitrified clay, and the manholes are constructed of brick, failures
26 in this main cause infiltration and inflow in the collection system and broken pumps in the
27 downstream pump station. A video inspection performed in 2014 found multiple cracks and
28 areas where the pipe is crushed.

The recommendation is to replace approximately 600 feet of 24-inch gravity main. This replacement was identified in the 2012 Monterey County Wastewater District CPS and again the 2016 Monterey Wastewater Capital Program Update.

F. Sacramento District Carry-over and Ongoing Projects

**1. Project Code I15-600066, Suburban-Rosemont Route 50 Crossing
(CANCELLED)**

Q139. Please describe.

A139. This project was designed and sent to bid. The bids for construction received were over 2.5 times the original project budget. California American Water decided not to proceed with constructing this project due to the high bid results. Engineering re-evaluated how to best address the pressure and operating limitations in the system, and this is being addressed under I15-600103 Suburban-Rosemont Hydraulic Improvements.

**2. Project Code I15-600082, Sacramento Generator Improvements
Program (CARRY-OVER)**

Q140. Please describe.

A140. This 2016 GRC approved program included the design of both the Van Maren Well Site and Vintage Treatment Plant generators. Van Maren generator is under construction and scheduled to be completed in June 2022. This included replacing the Van Maren generator with a new Tier 4 generator, putting the generator on a generator pad and connecting the generator to the existing Automatic Transfer Switch and connecting it to our SCADA system. The Vintage Treatment Plant generator is under construction and expected to be completed at the end of 2022. The Tier 4 generator for Vintage Treatment plant has been ordered but has a 36–42-week lead time. Construction is expected to include a new meter/main switchgear and panel boards, modifying the PLC, installing a new generator pad and the new generator. This scope of work is expected to continue with IP I15-600115 through 2024-2026.

The program includes implementing a prioritized plan for replacement as outlined in the 2016 Generator Planning Report completed for the Sacramento District, which is part of the Capital Investment Project Work Papers. This plan was developed for maintaining, replacing, and in some cases, relocating generators within selected Sacramento District water systems to provide the water supply reliability benchmark established by California American Water policy while conforming with the balance of the evaluation criteria established in the 2016 Generator Planning Report for the Sacramento District systems. In summary, the 2016 Generator Planning Report evaluated the capability to meet current and projected average day demands for the seven District systems which are expected to continue to rely on groundwater as their primary water source. The 2016 Generator Planning Report included an evaluation of the geographic distribution of standby power equipped wells and pumped storage facilities relative to system hydraulics, power substation grids, and school proximity which restricts the ability to exercise diesel fueled generators due to emissions regulations were evaluated for all generators. The age of the existing generators relative to anticipated useful life and/or need to retrofit the units to comply with current and impending tightening of air quality regulations were also key planning criteria. Additionally, the electrical connection of the generator to the facility were evaluated by a consultant for compliance with current codes and suitability for the new generators.

3. Project Code I15-600088, Sacramento District Water Quality Monitoring Program (CANCELLED)

Q141. Please describe.

A141. The previously approved project work was completed under the RP program; therefore, this project is not needed as an investment project and was cancelled.

4. Project Code I15-600097, Main Replacement Program (2021-2023)

1 (ONGOING)

2 Q142. Please describe this program.

3 A142. The 2019 GRC approved program is for the replacement of water mains in the Sacramento
4 District. The approved budget for this program was allocated to the Fruitridge Vista Main
5 Improvement Program (I15-660002) for the years 2020-2023. This scope of this program is
6 expected to continue with IP I15-600111 through 2024-2026.

7
8 **5. Project Code I15-600098, Sacramento Well Installation and**
9 **Replacement Program (2021-2023) (ONGOING)**

10 Q143. Please describe.

11 A143. This 2019 GRC approved program includes development of the 2021 Well Replacement
12 Plan (“WRP”), construction of the Cottage Way Well and replacement of Roseville Well 1.
13 The WRP was developed to evaluate and prioritize installation of replacement wells in
14 California American Water’s Northern Division and identifies future system deficiencies if
15 replacement wells are not installed. The Cottage Way Well is a completely new well added
16 to the Arden system in place of the Howe Well that was abandoned due to PFOA
17 contamination. The Cottage Way Well is currently in construction and is expected to be
18 complete before the end of 2022. Roseville Well 2 is a replacement of the original
19 Roseville Well 1. The original well experienced a significant reduction in specific capacity
20 and was scheduled for advanced rehabilitation and a casing inspection in 2021 under the
21 Well Rehabilitation Program. During the inspection, it was discovered that the well casing
22 was in very poor condition and too thin to perform the necessary rehabilitation to restore
23 the specific capacity. Construction of Roseville Well 2 is tied to the deactivation of
24 Roseville Well 1 and is expected to be completed before the end of 2022. This scope of
25 work is expected to continue with IP I15-600113 through 2024-2026.

26
27 This program provides California American Water the ability to construct entirely new well
28 sites and replacement wells on existing sites when feasible to address the needs of the nine

individual water systems. Many of the existing wells in the Sacramento District are nearing or have already exceeded their 60-year service life, are experiencing reduced specific capacity, and/or become affected by new or rising contamination levels. New wells continue to be needed throughout the Sacramento District to meet current demands and projected increases in demands.

6. Project Code I15-600099, Sacramento District Annual Well Rehabilitation Program (2021-2023) (ONGOING)

Q144. Please describe this program.

A144. This 2019 GRC approved program includes above- and below-ground rehabilitation efforts. Wells rehabilitated under this program include, Wildrose, Westporter, Palmerson, Roseville Road, Countryside, Eagle Ridge, and Villaview Wells. Rehabilitation efforts included well capacity restoration, well liner installation, and replacement of controls and instrumentation. These well rehabilitations are expected to be complete by the end of 2023. This scope of work is expected to continue with IP I15-600114 through 2024-2026.

This capital program continues a well rehabilitation program that has been authorized by the Commission for more than ten years. The primary source of water supply for the district includes over one hundred individual wells, which operate in conjunction with treatment plants, storage tanks, bulk water metering facilities, and related infrastructure to deliver high quality water to California American Water customers. These aging wells require ongoing maintenance, rehabilitation, and replacement of above- and below-ground facilities to continue to provide safe and reliable water supply to customers.

7. Project Code I15-600100, SCADA Maintenance and Improvement Program (2021-2023) (ONGOING)

Q145. Please describe.

1 A145. This 2019 GRC approved program includes upgrading the West Placer PLCs at the interties
2 and tank so that the system can operate efficiently due to the limitations on our wholesale
3 purchase water agreement, design and construction of the Dunnigan Water Treatment Plant
4 PLC and SCADA system, upgrades to our iFix which includes a tool to create tags for well
5 sites, upgrading our Win911 to the current version as the older version became obsolete,
6 and the installation of a new back panel and SCADA at Well 16.

7
8 This scope of work is expected to continue with IP I15-600112 through 2024-2026.

9
10 This capital IP is for on-going work to keep the SCADA equipment upgraded in the
11 Sacramento District. A significant investment in SCADA equipment has been made in the
12 past several years to provide better monitoring and control of California American Water
13 facilities throughout the Sacramento District. The Sacramento District has systematically
14 installed SCADA equipment at most of its operational well sites, treatment plants, booster
15 station sites, tank and booster station sites and numerous inter-agency water connections,
16 thereby giving it the ability to monitor and control the facilities and maintain adequate
17 potable water for the area customers. In order to keep this system up and running, SCADA
18 equipment must be maintained and updated. By continuing this historical program of
19 providing ongoing maintenance and replacement of SCADA equipment, California
20 American Water expects to be able to maintain and enhance water system reliability.

21
22 **8. Project Code I15-600101, Sacramento Generator Improvements**
23 **Program (2021-2023) (ONGOING)**

24 Q146. Please describe.

25 A146. This previously approved 2019 GRC program is for the generator improvements in the
26 Sacramento District. The Emergency Power Study is being completed in early 2022, and
27 California American Water expects to prioritize generator installations from the list of
28 recommendations for 2022 and 2023 under this program.

This scope of work is expected to continue with IP I15-600115 through 2024-2026.

9. Project Code I15-600102, Service Saddle Replacement Program (2021-2023) (ONGOING)

Q147. Please describe this program.

A147. This 2019 GRC approved program is for replacing service saddles on mains. Leakage history was reviewed and, based on the areas with the largest number and greatest amount of lost water, an area in the Antelope system was selected to replace the service saddles. The design was completed in 2021 and construction is starting and is expected to be complete in 2022. A total of 743 service saddles are scheduled to be replaced with this project.

This scope of work is expected to continue with IP I15-600116 through 2024-2026.

Service saddles are used to make service line connections on water mains. The saddles are mounted on mains and are typically equipped with rubber seals or gasket to fit between the saddle and main to form a watertight seal. This connection is held in place by a brass or stainless-steel strap that wraps around the pipe. The quality of service saddles is important to prevent leaks and maintain the integrity of pipe connections.

In some parts of the Antelope, Suburban-Rosemont, Lincoln Oaks, and Parkway systems, single strap stainless-steel saddles with a rubber bushing were used for service connections in 1980s and 1990s. These single strap saddles have been experiencing frequent failures causing leaks and service line breaks. They fail because the rubber deteriorates allowing the two metal types to contact one another and start the process of galvanic corrosion. These saddles have a typical life of 20 years; however, it is impossible to accurately predict when the saddles will fail. For more than a decade, there have been clear clusters of saddle leaks in specific regions where single strap saddles are present among four systems in the

1 Sacramento District: Antelope, Suburban-Rosemont, Parkway, and Lincoln Oaks.

2 Therefore, a programmatic approach to replacing these single strap saddles is proposed to
3 address the problem more efficiently in a manner that minimizes repair work and provides
4 greater customer satisfaction.

5
6 **10. Project Code I15-600103, Suburban Rosemont Hydraulic**
7 **Improvements Project (CARRY-OVER)**

8 Q148. Please describe.

9 A148. This 2019 GRC approved project has started and is expected to be completed in 2025.

10 Work underway includes a field study to monitor and record the pressures in the Suburban
11 Rosemont water system. The study involves the installation of 21 pressure loggers
12 throughout the Rosemont area and SCADA data collection. The field and SCADA data will
13 be used to calibrate the water model and water modeling scenarios to identify pressure
14 deficiencies and develop booster pump station criteria. A property acquisition search for
15 the proposed in-line booster pump station is underway and has identified a property located
16 between the high and lower pressure areas, owned by City of Rancho Cordova. Acquisition
17 and development discussions between California American Water and the City of Rancho
18 Cordova Engineering and Public Works Departments are ongoing.

19
20 **11. Project Code I15-600104, Security Park Booster Pump Station**
21 **(CARRY-OVER)**

22 Q149. Please describe.

23 A149. This 2019 GRC approved project has not begun; however, California American Water
24 plans to initiate work in 2022 and finish in 2023.

25
26 The Security Park system currently relies on a single active well (Central 2), located within
27 the service area boundary, and a surface water supply contract with Sacramento County
28 Water Agency to meet demands. Pumped water from Central 2 and purchased water from

the Sacramento County Water Agency intertie are piped to the existing water storage tank at the booster pump station facility, and water is then pumped to the system via the booster station. The booster station contains two normal duty pumps (30 hp, 300 gpm each) and two high flow pumps (75 hp, 1,000 gpm each). These are the original four pumps that were installed when the booster station was constructed in the 1950's, and therefore they need to be replaced due to significant pump deterioration and poor efficiency.

In addition to pump replacement, other necessary upgrades that are expected to help extend the useful life of the booster station building include new windows, exterior paint, and replacement of damaged portions of the metal structure, at a minimum. In 2016, rehabilitation of the electrical components of the booster station was completed, including new pump motor starters, motor control center, wiring and conduits, pump disconnect switches, and related appurtenances. Therefore, it is anticipated that only minimal electrical modifications may be required when replacing the four existing pumps and motors.

This capital investment project is needed in order to improve the operational reliability of the water system for both normal and emergency operations.

This project was identified in the 2018 Sacramento CPS.

12. Project Code I15-640001, Geyserville Storage Project (CARRY-OVER)

Q150. Please describe.

A150. This project has not yet started. It is expected to begin design in 2022 and be constructed in 2023.

The Geyserville system includes two storage reservoirs, a 75,000-gallon tank installed in 1972 and a 125,000-gallon tank installed in 1993. Due to its relatively remote location, Geyserville has no interties with any other water systems. The system relies solely on three

1 groundwater wells that pump directly into the storage tanks. ADD, MDD, PHD are all
2 addressed by gravity flow from the tanks. The existing storage tanks are currently
3 undergoing evaluation and will likely need seismic retrofits.

4
5 The 75,000-gallon tank is a welded steel tank that is not self-supporting and is not
6 structurally secured to any foundation. Seismic retrofitting this tank is expected to require
7 the volume to be reduced roughly in half for slosh wave height and develop some structural
8 method to address the overturning force caused by the slosh wave. The 125,000-gallon tank
9 is a bolted steel tank, and while it has some attachments to the foundation, it does not
10 address the slosh wave issue. This tank is also leaking from the bottom. Upon evaluation,
11 the recommendation to California American Water is expected to undoubtedly be to
12 replace both tanks, as the costs of retrofitting and rehabilitation on a per gallon basis will be
13 very expensive and more costly than replacing the tanks. Geyserville is located in a very
14 seismically-active area highly susceptible to liquefaction during a seismic event. Therefore,
15 the foundation requirements are expected to be very expensive, as a deep foundation will
16 likely be required.

17
18 While DDW regulations call for storage equivalent to the MDD, it is also allowable to
19 provide additional source capacity to supplement the storage volume requirements as noted
20 in the inspection report dated June 29, 2017. The recommended solution is to construct a
21 new 250,000-gallon storage tank that meets current seismic code. This is expected to
22 provide an amount of storage towards meeting maximum day demands and replace the
23 capacity of the existing tanks.

24
25 This project was identified in the 2018 Sacramento CPS.

26
27 **13. Project Code I15-650002, Meadowbrook Storage Project (CARRY-**
28

1 **OVER)**

2 Q151. Please describe.

3 A151. This project has not yet started. It is expected to begin design in 2022 and be constructed
4 in 2023.

5
6 In the absence of any storage volume and booster stations within the Meadowbrook system,
7 the supply differential between maximum day and peak hour demand must be addressed
8 either by a source of supply such as additional well capacity or guaranteed purchase water
9 deliveries to provide this capacity. Ultimately, as the system demands increase and this
10 differential becomes larger, it is expected to be more cost effective to provide surface
11 storage and a booster station to address instantaneous demand.

12
13 Peak demand equalization and fire protection in the Meadowbrook system is not currently
14 provided in accordance with Title 22 § 645554 requirements. Based on firm well supply
15 for MDD, a projected storage deficit for peak hour demand and maximum fire flow
16 demand is estimated to be approximately 1.3 mgd and 2 mgd, respectively, in 2035.

17
18 Based on California American Water planning criteria, to provide an effective storage
19 volume sufficient for system fire flows and an additional 15 percent of projected maximum
20 day demand for diurnal equalization, an additional 0.96 MG of storage would be
21 appropriate now, with an additional amount by 2035. Therefore, 1 MG of storage and a
22 booster station is recommended for the Meadowbrook system in 2021.

23
24 This project was identified in the 2018 Sacramento CPS

25
26 **14. Project Code I15-660002, Fruitridge Vista Main Replacement Program**
27 **(2021-2023) (ONGOING)**

28 Q152. Please describe.

1 A152. These main replacement projects are expected to allow reliable conveyance of water
2 through the recently acquired Fruitridge Vista system in the most efficient and cost-
3 effective manner, while potentially reducing energy costs.

4
5 The first phase of main replacement was in the Bowling Green Neighborhood and
6 consisted of installation of 18,000 LF of new water main in the street right of way to
7 replace backyard mains and over 400 new water meters. This phase was completed in early
8 2022.

9
10 The backyard mains in the Fruitridge Vista system are over 60 years old, in poor condition,
11 and prone to leakage. Overall, this project is necessary because of the condition of the
12 existing system and the need to install water meters on all unmetered services. When
13 constructed in the early 1950's, the use of steel water mains that were either bare steel or
14 wrapped on the exterior with tar paper was an accepted material at the time of construction
15 and is typical for large portions of the Sacramento area. Currently, all the water lines are in
16 backyards and are wrapped or bare steel lines that are near or have exceeded their service
17 life. This has been substantiated by the number and proximity of leaks to one another. In
18 some cases, the leaks are almost adjacent to one another as demonstrated by the location of
19 repair clamps. In addition, some leaks have been repaired using redwood plugs. There are
20 numerous wharf hydrants serving the area without isolation valves, and many of the system
21 valves have not been exercised, thus their condition as to whether they are operable is
22 unknown.

23
24 The complete program over the next 6 years calls for the construction of 81,500 feet of new
25 water main in the streets to replace the high-risk backyard mains, the replacement of fire
26 hydrants, and the installation of 1700 new services with meters.

This project was identified in the 2018 Sacramento CPS and the 2022 Fruitridge Vista CPS in the Distribution and Storage Sections and in the CBA analysis.

G. Larkfield District Previously Approved Carry-over and Ongoing IP

**1. Project Code I15-610009, Londonberry Drive Creek Crossing
(CARRY-OVER)**

Q153. Please describe.

A153. This 2013 GRC approved project involved design and permitting with multiple local, State, and Federal Agencies that was completed in late 2020. Easement negotiations are anticipated to be finalized in early 2022. It is anticipated that construction is expected to be completed in 2022.

An existing 8-inch asbestos cement pipe crosses Mark West Creek near Well #1A and is exposed in the creek bed. This pipeline is a service reliability concern within the Larkfield System and needs to be replaced. Currently, all water supply sources in the system are located on the south/west side of Mark West Creek, and storage is on the north/east side. This pipeline is one of two pipelines connecting the supply and storage sides of the system, and therefore it is a critical pipeline for both normal and emergency operations. The Tubbs Fire in October 2017 made it even more evident how important this pipeline is for the overall water system operational reliability, redundancy, and fire supply capacity. With this pipeline being only one of two connecting the supply and storage sides of the system, it will be necessary to upsize this pipeline during replacement to provide increased fire supply capacity. The pipeline replacement is expected to span from Londonberry Drive, near Well #1A, to Carriage Lane to the northeast.

In 2018, a Geotechnical Feasibility Study and Scour Analysis were completed, with a recommendation for a HDD pipeline crossing below Mark West Creek. The HDD crossing will be approximately 600 linear feet, and the remaining approximately 400 linear feet of

replacement pipe to Carriage Lane is expected to be constructed via open cut. A contract for the design and permitting of the HDD pipeline was executed in March 2019.

2. Project Code I15-610012, Replacement of the Backwash Tank at the Larkfield WTP (CARRY-OVER)

Q154. Please describe.

A154. This 2016 GRC approved project is for the replacement of the backwash tank at the Larkfield WTP. Construction plans for the project were 90 percent complete when the project was put on hold in October 2017 and delayed as a result of the Tubbs Fire. The proposed tank location on the water treatment plant site is being reevaluated to allow the addition of a finished water storage tank (see Project I15-610021). Additional design on the backwash tank is currently being completed, and we expect to bid the project by mid-2022.

3. Project Code I15-610015, LRK- Larkfield Main Replacement Program (2021-2023) (ONGOING)

Q155. Please describe.

A155. This 2019 GRC approved program includes planning and engineering of the Mark West Springs Crossing Pipeline Project. The project is expected to address the need for a complete loop serving the hydrants and services within the area outside Sutter Hospital. It is intended to address the high consequence of failure of the Mark West Springs Crossing at Old Redwood Highway, which is identified in the 2019 Sonoma County District CPS. The project is planned for completion before the end of 2022. This scope of work is expected to continue with IP I15-610025 through 2024-2026.

The project allows for a planned and prioritized method for replacing mains which have been identified in the 2019 Sonoma County District CPS and Buried Infrastructure CBA. The CBA was developed with the intent of allowing California American Water to develop

prioritized and planned asset upgrade and replacement programs. For water mains, the CBA asset categorization combines an assessment of likelihood of failure (based primarily on physical pipe characteristics as well as the frequency of reported repairs) and consequence of failure (based on factors including a criticality analysis and population density) to assign an estimated priority to pipes. To proactively replace mains that have been identified as having both a high likelihood of failure and high consequence of failure, a programmatic annual approach is recommended as the most cost-effective solution. In addition, areas exist where looping existing distribution mains would increase service reliability, foster better water quality, and improve pressures during high demand periods.

4. Project Code I15-610016, LRK- Larkfield Well Rehabilitation and Maintenance Program (2021-2023) (ONGOING)

Q156. Please describe.

A156. Work completed in this 2019 GRC approved program includes below-ground rehabilitation of Well 5 and installation of a replacement pump at the well. Work planned for completion before the end of 2022 includes below-ground rehabilitation of Wells 1 and 3a and above-ground improvements to Well 1's electrical panels. The projected spend through this program is \$280,000 before the end of 2022. This scope of work is expected to continue with IP I15-610027 through 2024-2026.

The wells are the primary source of water supply to the 2,400 services in the Larkfield Service Area. There are four individual wells that service the entire district, which operate in conjunction with treatment plants, storage tanks, bulk water metering facilities, and related infrastructure to deliver high quality water to California American Water customers. These aging wells require ongoing maintenance, rehabilitation, and replacement of above- and below-ground facilities to continue to provide safe and reliable water supply to customers.

1 **5. Project Code I15-610017, LRK- SCADA Master Plan and**
2 **Improvements Program (2021-2023) (ONGOING)**

3 Q157. Please describe.

4 A157. Work completed in this 2019 GRC approved program includes installation of a new
5 SCADA panel at the Upper Wikiup site, automation of the aqueduct for more efficient
6 control of the system, and electrical designs for the wells feeding the treatment plant. These
7 designs are expected to go out to bid in 2022 with SCADA and electrical upgrades to the
8 sites later in 2022. This scope of work is expected to continue with IP I15-610026 through
9 2024-2026.

10
11 A significant investment in SCADA equipment has been made to provide better monitoring
12 and control of California American Water facilities throughout the Larkfield service area.
13 To maintain this system, continued maintenance and updates to SCADA systems and
14 equipment must be performed. A comprehensive and well-maintained SCADA system
15 allows for more effective system control, monitoring, record keeping, and system
16 diagnosis.

17
18 The goal of the upgrades is to provide reliable communication to all sites, make the
19 SCADA system a priority source for system data, establish a standard automation and
20 equipment upgrade program, and replace obsolete systems and equipment. Upgrades to the
21 SCADA systems at the Larkfield Water Treatment Plant, in addition to the well sites,
22 booster stations, and tank sites are expected to bring all SCADA systems up to current
23 standards.

24
25 SCADA upgrades are expected to allow remote operation as well as real-time recording of
26 well water levels, flow rate, residual chlorine, and pressure. It also allows California
27 American Water to maintain and enhance water system reliability. This program is
28 expected to enable California American Water to make continued investments efficiently

and effectively in SCADA as the equipment has a finite life and requires ongoing maintenance and replacement.

6. Project Code I15-610018, LRK- Tank Rehabilitation and Seismic Upgrades (2021-2023) (ONGOING)

Q158. Please describe.

A158. Work completed in this 2019 GRC approved program includes detailed seismic evaluations with the engineering for the recommended improvements to immediately follow. The improvements are planned to be implemented in late 2022 and early 2023, when demand is low and the tanks can be taken out of service. Improvements are expected to be prioritized based on the recommendations of the design engineers. This scope of work is expected to continue with IP I15-610027 through 2024-2026.

This program was implemented in 2021 to provide detailed structural evaluations of each tank and install recommended seismic retrofits specific to each tank. The improvements are to be implemented during the scheduled maintenance cycles. The projects are expected to improve overall system reliability and seismic code compliance.

7. Project Code I15-610019, Larkfield Generator Projects (CARRY OVER)

Q159. Please describe.

A159. This 2019 GRC approved project is for the replacement of the North Wikiup Generator due to failure of the generator. Work on this project started in 2021 and will continue in 2022 including the design, construction, and installation of a new generator at Well 3A. The North Wikiup generator replacement project has completed generator removal, and site preparation for the new generator. A temporary generator has been installed to support North Wikiup until the new generator arrives. The Well 3A generator project is designed and will be sent to bid for construction in mid 2022.

1 Having adequate standby power is imperative for California American Water to meet
2 current or projected average day demands in the event of a power outage. Generators are
3 currently installed at pump stations but not at well sites. California American Water
4 planning criteria require that well production during a power outage should be able to meet
5 the ADD at a minimum. This criterion is not currently met in the Larkfield service area.
6 Installing a generator at Well 3A in the Larkfield system would allow this criterion to be
7 met.

8
9 Generators are currently available at the water treatment plant, the Lower Wikiup booster
10 station, and the North Wikiup booster station. Additional generators are recommended at
11 Well 1A or Well 5 to allow the necessary source of supply for fire flows in the system
12 during outages. An automatic transfer switch (“ATS”) is needed at Larkfield Water
13 Treatment Plant to allow continuous operation of the system.

14
15 In addition to other new generators, the generator at North Wikiup booster station is over
16 20 years old and is no longer operating reliably. A local generator repair company
17 determined that repair of the generator would not be cost effective due to the limited
18 availability of replacement parts and the extensive number of repairs required. The
19 generator at North Wikiup booster station is expected to be replaced as part of this project.

20
21 Air quality regulations prohibit non-emergency use of diesel generators located within
22 1,000 feet of school between 7:30 AM and 3:30 PM when school is in session. Well 3A
23 and Well 5 are located within 1,000 feet of a local elementary school. A natural gas fired
24 generator unit should be installed at Well 3A to allow the system to meet non-emergency
25 ADD. The remaining unit at Well 5 could be either diesel powered or natural gas units for
26 use during emergencies, including wildfire, when air quality regulations would not apply.

1 This project is a significant component of California American Water's ability to supply
2 water under all conditions, particularly when there is a loss of power in the grid.

3
4 This project was identified in the 2018 Sonoma County CPS.

5
6 **8. Project Code I15-610020, Larkfield Emergency Interconnection with**
7 **Windsor (CARRY OVER)**

8 Q160. Please describe.

9 A160. This 2019 GRC approved project is for an emergency interconnection with the city of
10 Windsor. California American Water has reached out to the City of Windsor and is
11 currently in negotiations on a mutual agreement for the use of the emergency interconnect
12 of the two water companies. Once an agreement is finalized and signed, design and
13 construction of the emergency interconnection can commence.

14
15 The Larkfield system has four active wells extracting groundwater and one wholesale water
16 interconnection with the Sonoma County Water Agency. No other sources of supply exist
17 in the Larkfield system. The active capacity, based on the four wells, is theoretically 965
18 gallons per minute (gpm) (1.39 MGD). However, under the pumping constraints
19 recommended in the Well Operations Plan, the daily yield is limited to 0.721 MGD. Due
20 to these limits, California American Water has historically taken up to a maximum rate of
21 about 972 gpm (1.4 MGD) from Sonoma County Water Agency during high usage months.

22
23 The system does not have any interconnections with any other purveyors to provide water
24 in the event of emergency. Discussions are currently ongoing with Windsor to secure an
25 emergency interconnection. This option is likely to be more cost effective than drilling a
26 new well.

California American Water proposes a new emergency interconnection and meter chamber with Windsor on Mark West Station Road where California American Water and Windsor have parallel 12-inch water mains. The project is expected to increase system reliability in the event of an emergency. This project was identified in the 2018 Sonoma County CPS.

9. Project Code I15-610021, Larkfield Water Storage at WTP (CARRY OVER)

Q161. Please describe.

A161. This project was approved in the 2019 CRC. This project has not yet started due to siting issues related to the backwash tank project. Design is expected to begin in 2022 with construction in 2023-2024.

The 2017 Larkfield Tank Study evaluated existing storage tanks and determined that the tanks did not meet current seismic design standards. Given that the tanks are all located in proximity to known fault lines, this poses a significant risk to California American Water's ability to supply customers in an emergency event. However, implementing the slosh space requirements in the tanks reduces the usable storage capacity of the system by nearly 50% and this loss of storage volume limits the ability to provide peak flow and fire flow capacity in the system.

Additional review of the system noted that all the storage is located north of Mark West Creek, while the wells, water plant, and half of the customers are on the south side of the creek. There are currently only two 8-inch mains crossing the creek and the loss of either of these creek crossings significantly impacts the ability of the system to provide peak and fire flows to a large portion of the system.

1 An additional 500,000-gallon storage tank and three 500 gpm booster pumps are planned to
2 be constructed at the Larkfield Water Treatment Plant to replace the lost storage capacity
3 and sustain flow and pressure to the Lower Wikiup zones.

4
5 The project is expected to improve overall system reliability, flow distribution, and
6 pressure. The proposed location for the replacement storage is expected to provide
7 sustained flow and pressure to the Lower Wikiup zones south of the creek.

8
9 This project was identified in the 2018 Sonoma County CPS.

10
11 **10. Project Code I15-610022, Wikiup Drive Main Replacement (CARRY**
12 **OVER)**

13 Q162. Please describe.

14 A162. This project was approved in the 2019 GRC. This project is currently in design and is
15 expected to be put out to bid for construction later in 2022. Construction is expected to be
16 finished by the end of 2023.

17
18 The 2017 Tubbs Wildfire highlighted the need for upgrades in the water distribution system
19 in terms of condition, capacity, and reliability. The Wikiup Drive water main was designed
20 to provide water to the upper Wikiup pressure and gravity zones served via the upper
21 Wikiup storage tanks and booster station. The main is fed from the lower Wikiup booster
22 pumps and discharges into the upper Wikiup storage tank, a vertical rise of approximately
23 250 feet. The gravity zone feeds off this main while the pressure zone is served by the
24 upper Wikiup booster pumps. The 3,600-foot-long transmission main was constructed in
25 1960 of 6- inch diameter asbestos cement pipe. The pipeline runs on a seismic fault line
26 and is prone to breakage. Three water main breaks attributed to seismic movements have
27 occurred in the last eight years. The pipe size also needs to be increased for fire flow
28 capacity.

Following the Tubbs Fire, it was also determined that the pumps at the Lower Wikiup Pump Station could not meet the minimum fire flow standard for rural areas or maintain system pressures under certain operating conditions. Specifically, these problems occurred when the Upper Wikiup Tank and Booster Station were out of service. Refilling the upper Wikiup Tank required over 6 hours with no other demand on the system. The increased pipe size and Lower Wikiup Pump Station improvements are expected to allow greater flow and reduce the time needed to fill the Upper Wikiup Tank.

The recommended solution is to replace water transmission mains between Lower and Upper Wikiup tank sites. The main should be upsized to a minimum of 10-inch diameter pipe to allow a fire flow of up to 1500 gpm at an acceptable velocity and head loss. The selection of pipe material for the transmission main should consider the ability of the pipe to tolerate seismic movements. A continuous weld high density polyethylene (“HDPE”) pipe or flexible restrained joint ductile (“DI”) iron pipe should be considered. To increase the flow rates, a fire pump should be installed at the Lower Wikiup Booster Station to provide fire flows to the Upper Wikiup pressure zones.

XII. PERFORMED OR PLANNED BUT NOT YET ADOPTED CAPITAL INVESTMENT PROJECTS

A. Southern Division Projects Performed or Planned, but Not Yet Adopted

1. Project Code I15-510041, Ventura PSPS Power Storage Project (“SGIP”) (PLANNED, NOT YET ADOPTED)

Q163. Please describe.

A163. This project is currently in the design phase and will begin construction in the summer of 2022 with completion of construction by the end of 2022. This project is expected to install battery storage systems at Dewey and American Oaks pump stations. The Self Generation Incentive Program (“SGIP”) is a partnership between the Commission and regulated electric utilities. The program offers financial incentives to applicants for the installation of

1 clean, efficient, on-site distributed energy systems at their facilities. Those systems are
2 designed to meet all or a portion of the facilities' electric energy needs.

3
4 California American Water has partnered with Scale Microgrid Solutions to install battery
5 energy storage systems ("BESS") at the Dewey Booster Pump Station ("BPS") and the
6 American Oaks Booster Pump Station in its Ventura County District, and at the Lower
7 Wikiup Tank and Booster facility in its Larkfield District in Sonoma County. The
8 Company recently received tentative SGIP funding reservations to install similar systems at
9 two water treatment plants in its Hillview District in Madera County. The Company intends
10 to pursue projects at both locations.

11
12 The Dewey BPS is a pumping facility in the Ventura County District in Thousand Oaks,
13 California. The facility houses two 25HP – 550 GPM pumps. The primary function of the
14 station is to fill the nearby Orbis Tank. The BESS is expected to provide up to 24 hours of
15 electric power that can be utilized during planned or unplanned power outages. The Dewey
16 BPS is expected to receive a SGIP incentive, which is expected to bring the net cost for the
17 project down. The American Oaks BPS is a pumping facility in the Ventura County District
18 in Thousand Oaks, California. The facility houses two 30HP – 900GPM pumps. The
19 primary function of the station is to fill the nearby Orbis Tank. The BESS is expected to
20 provide up to 24 hours of electric power that can be utilized during planned or unplanned
21 power outages. The American Oaks BPS project is expected to receive a SGIP incentive,
22 which is expected to bring the net cost for that project down.

23
24 In response to the increasing frequency of wildfires, and the power outages that often
25 accompany them, California American Water has explored various ways to boost its ability
26 to maintain continuity of service as a means of mitigating the impacts to our customers.
27 Participation in the SGIP program provides a flexible, environmentally responsible path to
28 achieve this goal. Additionally, the increased resiliency offered by the energy storage

1 systems is expected to allow future participation in demand response, load shedding, and
2 other similar programs designed to decrease stress on the state's electric grid. This
3 reinforces California American Water's commitment to being a leading example of
4 environmental responsibility for our customers as well as our neighbors in the communities
5 we serve. California American Water recommends that the Commission approve this
6 project for the requested dollar amount and the proposed timeframe.

7
8
9 **2. Project Code I15-570001, El Rio New Interconnect with United Water**
10 **(PLANNED, NOT YET ADOPTED)**

11 Q164. Please describe.

12 A164. This project is currently in the process of finalizing an interconnection agreement with
13 United Water. Design for the interconnection is planned to begin in the fall of 2022 and
14 construction of the interconnect is anticipated to be complete in 2023. This investment
15 project is expected to construct an emergency interconnection between the El Rio System
16 and United Water Conservation District system.

17
18 The El Rio system relies on two aged wells that have needed rehabilitation and
19 investigation requiring the wells to be taken out of service. California American Water
20 recommends an emergency interconnection with United Water Conservation District that
21 could be activated to supply the El Rio System if the existing wells or booster pumps
22 needed to be taken out of service. The project would include construction of piping,
23 valving, and flow meter installation inside a buried vault, with complete SCADA
24 integration. The interconnection is only an emergency supply source limited to no more
25 than 15 days maximum per year and no more than 5 days of continuous use. This
26 interconnection would not provide a long-term solution in the event the wells are offline for
27 an extended period. However, it is expected to provide an interim source of supply for
28 example if wells are out of service due to mechanical failure of a pump or motor. This

project was identified in the 2022 El Rio CPS. This project was bid to three design consultants in early June 2022.

B. Central Division Projects Performed or Planned, But Not Yet Adopted

1. Project Code I15-400144, Carmel River Reroute and Dam Removal (“CRRDR”) Pipeline Removal Project (PLANNED, NOT YET ADOPTED)

Q165. Please describe.

A165. This project was started in 2021 and is scheduled to be completed in 2023. As a requirement of the former CRRDR project, California American Water is required to donate the project property to a public entity. To date the Bureau of Land Management (“BLM”) has expressed interest in receiving the property. As a condition of receiving the property, BLM has stipulated that all above ground portions of the original pipeline from the former San Clemente Dam be removed.

To date, permitting applications have been submitted to Monterey County, USACE, USFWS and CDFW (California Department of Fish and Wildlife). Design and permitting are scheduled for completion in 2022. Construction is estimated to occur over two working seasons, summer of 2022 and 2023.

2. Project Code I15-400149-01, 02 MRY-CRRDR Project Rockfall Safety Project, Phase 1 and Phase 2 (PERFORMED, NOT YET ADOPTED)

Q166. Please describe.

A166. Over the past several years there have been intermittent rockslides along various access roads within the San Clemente Dam property, primarily after the winter season. Most of the rockslides are minor in nature and only require routine maintenance. However, there is a location along approx. 300 feet of the sole access road where the slope is approx. 100 feet tall. At this location there are active fractures in the rock, including boulders ranging in size

from approx. 1 to 6 feet in diameter. This area required more thorough slope mitigation improvements to address the larger area and risk above because it is a frequently traveled access road. This road is critical to maintain safe access within company property for both company personnel, visitors, and MPWMD staff who use the road daily to operate their steelhead rearing facility. Also, in the future, the property is expected to be donated to a public agency for public access. This work was performed by a specialty type contractor. During this project, slopes directly adjacent to the rockslide area were burned by the Carmel Fire and vegetation in that area was lost. The uncovered soil significantly increased the risk of erosion of both soil and rocks in the area. Therefore, the rockslide area to be addressed was expanded significantly in size. These additional costs were submitted to the Commission under a Catastrophic Event Memorandum Account (“CEMA”).

3. Project Code I15-400150, MRY-CRRDR Property Landscape and Irrigation Wildfire Recovery CEMA 2020 (PLANNED, NOT YET ADOPTED)

Q167. Please describe.

A167. As a result of the Carmel Wildfire which occurred in August – September 2020, California American Water experienced damage to the restoration area at its former San Clemente Dam site. The damage involves most of the plantings established as part of the completed project that removed the dam and restored the Carmel River, including most of the irrigation piping system, electrical service equipment and an irrigation well.

This project is expected to include work to replant some of the plants that were lost to the fire and provide localized irrigation for those plantings. The project also includes work to remove all the damaged irrigation piping and to address loss of created wetlands due to debris flows that resulted from rain event impacts to the burn areas. This project is expected to be completed in 2023.

California American Water is awaiting a response from the regulatory agencies on whether any relief from the original planting requirements will be granted. An estimated 80% of the plantings were burned.

California American Water submitted a CEMA notification to the Commission on September 15, 2020, for this project.

4. Project Code I15-400151, MRY-Los Padres Dam Siphon and Fish Trap Improvements (PERFORMED, NOT YET ADOPTED)

Q168. Please describe.

A168. In 2019, a landslide occurred above the LPD reservoir which blocked the dam's underwater outlet. Additional smaller landslides occurred in 2020, creating more silt buildup around the outlet. The cumulative effects of these landslides and resulting underwater outlet blockage did not allow California American Water to deliver the minimum flows to the Carmel River and did not allow a reliable source of water to the upstream fish trap.

To ensure minimum release flows to the Carmel River during the low flow season and provide flow to the upstream fish trap during the trap operating season, California American Water installed a 700 foot - 16" HDPE aboveground siphon within the dam spillway. The siphon is currently being used as the primary source of water during the low flow season for both the Carmel River flow and the water source for the fish trap until the LPD underwater outlet is rebuilt in 2023.

5. Project Code I15-400152, Los Padres Dam Outlet Modifications (PLANNED, NOT YET ADOPTED)

Q169. Please describe.

A169. This project is anticipated to be completed in 2023. In 2019 a landslide occurred above the LPD reservoir resulting in partial blocking of the dam's underwater outlet. Additional

smaller landslides occurred in 2020. The cumulative effect of these landslides has blocked the LPD underwater outlet. California American Water is currently unable to deliver the minimum flow to the Carmel River during the summer dry season. The effect of these landslides also does not allow California American Water to comply with DSOD requirements for normal operation of the LPD. This project is critical to keep the dam in good working order per DSOD requirements. This project involves construction of a new underwater outlet further away from the landslide area and installation of underwater piping from the new outlet to the original outlet. The new outlet is expected to include a remotely operated valve to be able to control flow into the outlet. To date, design drawings have been completed and submitted to DSOD for approval. Permitting for the project includes obtaining California Environmental Quality Act (“CEQA”) approval. California American Water is currently coordinating the CEQA process for the project with state agencies. Upon receipt of project approval from DSOD and required permits, California American Water is expected to construct the project. Improvements are estimated to be complete by 2023.

6. Project Code I15-420005, Las Palmas Wastewater Treatment Plant Chlorine Contact Basin (PERFORMED, NOT YET ADOPTED)

Q170. Please describe.

A170. This project was designed from October 2020 – January 2021 and was started and completed in February 2021. The Las Palmas Wastewater Treatment Plant did not have adequate chlorine contact capacity to provide the necessary chlorine contact time for treating the maximum plant influent during higher flow periods. This project replaced 220 feet of the existing 24-inch chlorine contact pipeline effluent line with a 48-inch pipeline to provide the necessary chlorine contact time for all ranges of plant flow.

7. Project Code I15-420006, Carmel Valley Ranch Wastewater Plant

Filter and Screen Upgrades (PLANNED, NOT YET ADOPTED)

Q171. Please describe.

A171. This project is for the replacement of the existing effluent filters and intake screens at the Carmel Valley Ranch Wastewater Plant. The existing filters are not functioning correctly and are unable to filter all the plant effluent, resulting in having to recirculate effluent into the equalization basin. Significant operational costs have been paid to a sludge hauling company to haul effluent to an offsite location. California American Water has spent over \$65,000 in hauling costs in the past 3 years. Also, the intake screens at the treatment plant are not performing adequately, which has resulted in an overflow of raw influent onto the surrounding area. The current screens also require daily maintenance to keep solids from clogging screens and causing an overflow event.

A new filter system and intake screen is expected to allow California American Water operations to adequately handle all incoming wastewater flows for this facility and remain in regulatory compliance with State and local operating permits.

Currently, the project is under design, and the filter system has been ordered. The filter system is scheduled to be released for fabrication shortly and the plan is to complete the project by the end of 2022.

8. Project Code I15-480014, New Toro Well #4 (PLANNED, NOT YET ADOPTED)

Q172. Please describe.

A172. This project is anticipated to be complete in 2023. The new well was designed, permitted, and drilled. The design was completed for the above ground facilities including production facilities to tie into the treatment plant and distribution system. A contractor has been retained for the piping and electrical work to connect the well to the treatment plant. The

contractor is expected to mobilize once it receives the electrical parts with the longest lead times.

Beginning in 2021 both of the system wells experienced a reduction in supply which resulted in periodic water shortages. Despite recent well rehabilitations, the new well was necessary due to the reduction in supply and well conditions. During the well rehabilitation the casing for Well #2 was found severely corroded. The corrosion was to the extent that it would have been too difficult and costly to repair. The well was put back into service with the understanding that it was near the end of its useful life and development of a new well was essential. In July 2021, the presence of high-density total coliform was confirmed in Well #2. Subsequently California American Water reported the plan to replace well #2 to DDW because the coliform contamination could not be resolved. Thus, an expedited well replacement was necessary.

C. Northern Division Projects Performed or Planned But Not Yet Adopted

**1. Project Code I15-660003, Fruitridge Vista Well Rehabilitation Program
(2021-2023) (PLANNED, NOT YET ADOPTED)**

Q173. Please describe.

A173. This 2019 GRC approved program includes the design and permitting of Well 14.

Construction is in progress and is expected to be done by the end of 2022. Work includes a new storm drain, hydropneumatic tank, electrical equipment, chlorine analyzer, pump, motor, chemical building, instrumentation, and site improvements. This scope of work is expected to continue with IP I15-660005 through 2024-2026.

This capital investment program is for the well rehabilitation of the 13 wells which are the primary source of water supply for this system. These aging wells require ongoing maintenance, rehabilitation, and replacement of above- and below-ground facilities to continue to provide safe and reliable water supply to customers.

XIII. ADVICE LETTER CAPITAL INVESTMENT PROJECTS

A. Northern Division Advice Letter Capital Improvement Projects

**1. Project Code I15-610002, Faight Road Well (ADVICE LETTER)
(CANCELLED)**

Q174. Please describe.

A174. This project is cancelled. Since 2013, the water supply for the Larkfield system has been successfully supplemented with surplus capacity (albeit on a temporary contract basis) from the Sonoma County Water Agency's ("SCWA") source of supply. SCWA also provided a letter to California American Water (dated April 1, 2016) wherein the agency determined that there is adequate capacity in the transmission system to extend the term of the supplemental agreement for an additional six years (from 2019 to 2025). California American Water has contacted SCWA to discuss the drought's direct impact on the County's aqueduct, and its ability to provide future water supply to the Larkfield Service Area by granting an extension to the current supplemental agreement. This project is cancelled until further discussions take place and there is a better understanding of SCWA's response to the extended drought conditions.

XIV. MEMO ACCOUNT CAPITAL INVESTMENT PROJECTS

A. Larkfield District Memo Account Projects

**1. Project Code I15-610014, Larkfield Wildfire Upper Wikiup Tank Site
(MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)**

Q175. Please describe.

A175. The October 2017 Tubbs Fire destroyed homes and businesses comprising nearly 25 percent of the water system customers and caused significant water system infrastructure losses to the water distribution and delivery system. This is one of two projects related to the recovery effort. California American Water losses at the Upper Wikiup site included:

- 48,000-gallon storage tank

- 200 gpm pump station
- 5,000-gallon hydropneumatic tank
- Emergency generator

The debris from the generator, pump station, hydro tank and the roof of the storage tank has been removed and the power was restored in October 2018. A temporary booster pump station has been installed at the Upper Wikiup tank site. A geotechnical study and design for supporting the embankments was completed and construction permits were approved by Sonoma County. Two of the concrete tank walls were modified to act as a retaining wall supporting the embankment. The other two walls were removed. A permanent pump station with a hydropneumatic tank and an emergency generator is expected to be constructed on the site of the demolished tank to replace the temporary pump station. The duty pumps are expected to provide for daily domestic water use and a high service pump for fire flow. Space constraints at this site prevent the replacement of the storage tank.

The work began in February 2018 and is expected to be completed by the end of 2023. This project is being funded by fire insurance proceeds.

This project is necessary to provide adequate system pressure and fire flows.

2. Project Code I15-610023, Larkfield Wildfire Water Distribution System Recovery (MEMO ACCOUNT) (COMPLETED)

Q176. Please describe.

A176. The work began in February 2018 and was completed by the end of 2020. All 46 fire hydrants have been installed and 538 services have been upgraded. The remaining properties are not being rebuilt or are changing land use. This project was necessary for the California American Water customers in this service area to rebuild and occupy their

properties in a timely manner after the October 2017 Tubbs Fire destroyed homes and businesses comprising nearly 25% of the water system.

B. Sacramento District Memo Account Projects

**1. Project Code I15-620002, Dunnigan Wastewater Improvements Project
(MEMO ACCOUNT) (COMPLETED)**

Q177. Please describe.

A177. The Dunnigan wastewater improvements consisted of two separate projects: upgrading the treatment pond system and replacement of the wastewater pump station.

Construction for the treatment pond upgrades was completed in October 2020 and the final operating permit was issued in August 2021. The replacement of the wastewater pump station with a new submersible pump station and interceptor sewer from the existing pump station site was constructed and placed in operation in mid-2020.

a) Treatment Pond Upgrades

The Regional Water Quality Control Board (“RWQCB”) regulates the operation of the Dunnigan Wastewater system under Waste Discharge Requirements (“WDR”) Order No. R5-2010-0013 and is subject to provision of the California Water Code (particularly the Porter-Cologne Water Quality Control Act) and policies contained in the Basin Plan for the Central Valley.

The existing Wastewater Treatment Facility (“WWTF”) consisted of four treatment and disposal ponds that operated individually. The ponds were unlined and heavily eroded and, with no interconnecting piping between ponds, they operated as terminal/disposal ponds. With no provision for operating as separate treatment and disposal ponds the configuration and operation posed a concern for maintaining long-term treatment and disposal performance.

1 Reconfiguration of the ponds into two lined treatment ponds and two infiltration ponds to
2 allow for separate treatment and disposal facilitates operation of the wastewater system
3 consistent with the requirements of the WDR was undertaken. Lining of the treatment
4 ponds enhanced operation and improved the performance of the disposal ponds by
5 removing the solids in the treatment ponds. A final element of this project was the
6 installation of two additional monitoring wells for background water quality and levels.
7

8 **b) Wastewater Pump Station Replacement**

9 The Dunnigan Wastewater Pump Station was in danger of failing mechanically and
10 electrically in addition to being non-compliant with many National Electric Code (“NEC”)
11 and OSHA requirements. Due to its location, method of construction, and materials of
12 construction, it was determined that relocating the pump station to a more accessible site
13 and construction of a new precast packaged pump station would be the most cost effective
14 and safe solution.
15

16 **2. Project Code I15-630002, Dunnigan Water System Improvements** 17 **(MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)**

18 Q178. Please describe.

19 A178. This project included installing a permanent generator at the Water Treatment Plant to run
20 the facilities to maintain system pressure in the event of a power outage, the electrical
21 improvements required to meet the current electrical code to install the backup generator,
22 which included a new PG&E electrical service, installation of an automatic transfer switch,
23 conduit, wires, and a generator pad.
24

25 The Dunnigan Water System had no permanent backup generator to run the facilities to
26 maintain minimum system pressure in the event of a power outage. This memorandum
27 account captured the costs associated with the electrical improvements required to meet the
28 current electrical code to install a backup generator at the tank and booster pump station.

The scope of work involved a new PG&E electrical service which feeds just the California American Water tank and booster pump station facilities, installation of an automatic transfer switch, procurement of a new emergency diesel generator, conduit, wires, and a pad for the generator. The new facilities have been constructed and are in operation. Additional modifications to the electrical systems are expected to be completed during the summer of 2022.

3. Project Code I15-630004, Dunnigan New Well No. 3 (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)

Q179. Please describe.

A179. In 2021, the replacement well was drilled and engineering for the above ground facilities was completed. The above ground improvements are currently in construction and the well is planned to be online and operable before the end of 2022.

This IP project is for the construction of a new well in Dunnigan to replace Well No. 2, a well that was subject to PFAS contamination. Well No. 2 can currently run only 5 days a year at the current levels of PFAS contamination and is not a reliable water supply for the system. The system is primarily supported by a single operable water supply well, Well No. 1. A second operable supply well is required to meet current DDW Water Works Standards.

4. Project Code I15-640003, Geyserville PSPS Generator Improvements (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)

Q180. Please describe.

A180. The 2 sites to receive these improvements are Wells 1 and 3. The design is complete for these projects. California American Water is currently working with legal and the property owner for approval of the final layout of the site. Once finalized, this project can be sent to bid for construction. Current costs to date are for design of these two sites along with PLC

1 and SCADA programming upgrades that were necessary at the Tank site to support the
2 operation of the system.

3
4 This IP project is for the addition of a permanent generator, automatic transfer switch ATS,
5 upgraded PLC, SCADA components, and other associated electrical improvements to two
6 sites in the Geyserville District. These modifications have become necessary to allow the
7 system to operate with minimum disruption during PSPS events which have been
8 established by PG&E to minimize the risk of their electric grid starting a wildfire.
9 Whenever power is unavailable from PG&E, the ATS senses it and automatically starts the
10 generator and powers the site from it. When PG&E power is restored, the ATS
11 automatically stops the generator and powers the site from PG&E supplied power.

12
13 **5. Project Code I15-660001 (formerly I15-600105), Fruitridge Vista Meter**
14 **Installation (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)**

15 Q181. Please describe.

16 A181. The Fruitridge Vista system in the Sacramento District has approximately 3,176 unmetered
17 and 1,500 metered connections. The first two phases of the meter installation program
18 were completed in early 2022. They consisted of the installation of 1330 new and
19 replacement meters. An additional 400 new meters were installed during the first phase of
20 the backyard water main replacement program. The total meters installed to date is 1,730.

21
22 Assembly Bill 2572 requires urban water suppliers to install water meters on all municipal
23 and industrial water service connections on or before January 1, 2025. This project is
24 expected to continue with three additional phases to attempt to complete the installation by
25 the mandated deadline. A total of 1,846 additional new and replacement meters are
26 expected to be installed. It is important to note, however, that because of issues, including
27 significant supply chain constraints, it is becoming more likely that the remaining phases of
28

meter installations could experience delays, and that could potentially impact our ability to meet the January 1, 2025, deadline.

Most of these unmetered water services are located in backyards or side yards and are either asbestos cement or wrapped steel pipe. A major issue with these mains is that the steel mains are thin-walled steel wrapped with a tar or bitumastic saturated felt for corrosion control and must be handled with care or they break easily. In addition, the service lines typically come off the pipe at the top and while they have a corporation stop at the main, they do not have a curb stop. Isolation of the service line to facilitate installation of a meter will require the location of the main and service line to facilitate excavation in the appropriate location for access to the corporation stop. This is expected to add a significant amount of labor costs to the installation of the meters and may present shutdown issues if the corporation stops are corroded and cannot be closed. Historically, services on the steel mains have been welded connections; whereas, on the asbestos cement distribution lines the services are saddles, which in many cases will have to be replaced once they are exposed to get at the corporation stop due to corrosion. To estimate the costs for this project given the backyard mains, age, and type of water mains, the costs of the metering projects were evaluated to come up with an estimated cost per service for the Fruitridge Vista service area.

6. Project Code I15-670001, Public Safety Power Shutoffs Generator Improvements (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)

Q182. Please describe.

A182. Design for the addition of generator plugs at 9 sites in the Hillview District is complete.

These sites are currently in construction and are expected to be complete by mid-2022.

California American Water completed an Emergency Power Study in 2022 and is expected

1 to use the recommendations from the report for locations of the permanent generators with
2 ATSS. These are expected be designed in 2022 and constructed in 2023.

3
4 This IP project is for the addition of generator plugs at well sites and permanent generators,
5 ATSS, upgraded PLC, SCADA components, and other associated electrical improvements
6 to sites in the Hillview District to supply water during public safety power outages. These
7 modifications have become necessary to allow the system to operate with minimum
8 disruption during public PSPS events which have been established by PG&E to minimize
9 the risk of their electric grid starting a wildfire. Whenever power is unavailable from
10 PG&E, the ATS senses it and automatically starts the generator and powers the site from it.
11 When PG&E power is restored, the ATS automatically stops the generator and powers the
12 site from PG&E supplied power.

13
14 **7. Project Code I15-670002, New Coarsegold Iron & Manganese Water**
15 **Treatment Plant Project (MEMO ACCOUNT- PLANNED, NOT YET**
16 **ADOPTED)**

17 Q183. Please describe.

18 A183. This IP project is for the addition of an iron and manganese treatment plant in the
19 Coarsegold system of the Hillview District. The need for treatment has persisted since
20 California American Water acquired the Coarsegold system in 2020 and comes as a
21 condition of the Change of Ownership Permit issued by DDW. The Coarsegold water
22 system is served by two wells with elevated concentrations of iron and manganese, which
23 exceed secondary MCL for the respective constituents. These wells pump to a common set
24 of storage tanks that feed the distribution system where iron and manganese concentrations
25 are monitored for the system.

26
27 Preliminary efforts to select a treatment technology, permit its use, and design its
28 implementation were started in 2020 and are ongoing. The project has a planned

completion date of October 2023. This project is expected to provide a treatment system serving both wells that are expected to reduce the concentrations of iron and manganese to below the secondary MCLs and satisfy the conditions of the Change of Ownership Permit.

8. Project Code I15-670003, New Goldside Iron & Manganese Water Treatment Plant Project (MEMO ACCOUNT- PLANNED, NOT YET ADOPTED)

Q184. Please describe.

A184. This IP project is for the addition of an iron and manganese treatment plant in the Goldside system of the Hillview District. The need for treatment has persisted since California American Water acquired the Coarsegold system in 2020 and comes as a condition of the Change of Ownership Permit issued by DDW. The Goldside water system is served by a combination of six active wells, three of which have elevated concentrations of iron and manganese above the secondary MCL and continue to report running annual averages above the regulatory limits.

The preliminary efforts to select a treatment technology, permit its use, and design its implementation were started in 2020 and are ongoing. The project has a planned completion date of December 2024. The project is expected to provide a single treatment system for all three wells that is expected to reduce the concentrations of iron and manganese to below the secondary MCLs and satisfy the conditions of the Change of Ownership Permit.

XV. PROPOSED NEW CAPITAL INVESTMENT PROJECTS

A. Corporate New Projects

1. Project Code I15-010003, Corporate Headquarters Relocation and New Sacramento Operations Center (PROPOSED PROJECT)

Q185. Please describe.

1 A185. California American Water would like to relocate its corporate headquarters (“Corporate
2 HQ”) from San Diego to Sacramento by the year 2030 or sooner. In the late 1960s,
3 California American Water’s largest service area was in the San Diego area. However,
4 today the Sacramento/Northern Division service area is the Company’s largest service area
5 with the largest base of employees and the greatest growth potential. Additionally, having
6 the Corporate HQ located in the Sacramento area provides better access to the state capital
7 and surrounding area, which hosts most of state agencies regulating the water utility
8 industry. Additionally, having the Corporate HQ based out of Sacramento area provides
9 easier and less expensive commutes for activities related to the Commission in San
10 Francisco. So, locating the Corporate HQ in the Sacramento area brings convenience and
11 efficiency to both sides. For these reasons and others, it makes the most sense to consider
12 moving the Corporate HQ to the Sacramento area should the economics and benefits make
13 sense for our customers, employees, and regulators.

14
15 If California American Water moves its headquarters, consideration must be given
16 regarding the current San Diego Corporate HQ office and its employees. The San Diego
17 Corporate HQ lease expires in 2025 but has a 5-year renewal term to extend it until 2030.
18 This allows sufficient time to begin the transition and relocation of Corporate HQ to
19 Sacramento to ensure a smooth and efficient transition for both our employees and the
20 business.

21
22 The Company would also desire to relocate the Sacramento Operations Center
23 (“Sacramento OC”) together with the Corporate HQ to a new consolidated corporate office
24 and operations campus (“Consolidated Campus”). The current Sacramento OC at 4701
25 Beloit Drive does not meet the needs of the Company going forward for assorted reasons
26 including, but not limited to: physical space and capacity constraints, parking, location,
27 employee security and safety, building conditions and environmental health.

1 Q186. What is the proposed schedule for this project?

2 A186. American Water has a commercial relationship with CBRE Group, Inc. to help facilitate
3 American Water's real estate needs across the nation. CBRE is the world's largest
4 commercial real estate services firm. California American Water will leverage this
5 relationship to engage with CBRE to conduct a detailed transition and relocation study to
6 identify the viable geographic area and developable land to construct the new Consolidated
7 Campus. California American Water envisions completing the study in 2024.
8 Subsequently, later in 2024 through 2025, California American Water would begin to
9 investigate the developable land identified and is targeting to purchase the land in 2025.
10 California American Water has approximately \$3,000,000 in this rate case filing to acquire
11 land. Subsequently, in 2026-2027 the Company expects to begin planning, design, and
12 permitting efforts for the new Consolidated Campus. This is expected to be followed by
13 construction and relocation activities in 2028-2030. In 2025, as part of the Company's next
14 GRC application filing, California American Water will provide an update on plans, cost
15 estimates, and schedule regarding this transition.

16
17 Q187. What will the Company and CBRE examine in determining location and identifying land
18 for the proposed new Consolidated Campus?

19 A187. The study performed by CBRE is expected to examine a multitude of alternatives and
20 factors for California American Water to consider, including location, cost, size, outfitting,
21 temporary transition space, logistics, schedule, benefits, etc. The study is expected to guide
22 California American Water's decision to select the best path forward to reestablish its new
23 Corporate HQ in the Sacramento region and relocation of existing Sacramento OC that
24 brings many benefits to our employees, customers, regulators, and the business.

25
26 Q188. What does the Company plan to do with existing Sacramento Operations Center that it
27 currently owns?
28

A188. It is anticipated that California American Water would begin the process of selling its existing Sacramento OC when the new Consolidated Campus is complete and relocation to the new location has begun. The funds received from the sale are expected to be applied to offset costs associated with the new Consolidated Campus.

B. San Diego County District Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

San Diego County Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-300020	SD-Coronado Storage Tank and Pump Station	2024-2026	\$4,255,634	\$866,511	\$874,623	\$2,514,500
I15-300023	SD-Transbay Transmission Main Rehabilitation Project	2024-2028	\$2,366,635	\$617,389	\$874,623	\$874,623
I15-300026	SD-Main Replacement Program (2024-2026)	Annual	\$10,950,720	\$3,223,422	\$3,863,649	\$3,863,649
I15-300027	SD-Alternative Source of Supply Project	2024-2027	\$817,425	\$270,785	\$273,320	\$273,320
	Total		\$18,390,414	\$4,978,107	\$5,886,215	\$7,526,092

**1. Project Code I15-300020, Coronado Storage Tank and Pump Station
(PROPOSED PROJECT)**

Q189. Please describe.

1 A189. This proposed investment project provides additional storage to the Coronado service area
2 and a pump station to maintain pressure in the service area including fire flow. This project
3 will also provide the ability to take the Transbay Transmission Main out of service for an
4 extended period to perform inspections, maintenance, or repairs. The water system
5 currently includes two water storage tanks, both in the South San Diego section of the
6 water system. The Coronado service area of the water system is in the Highland Pressure
7 Zone, but geographically remote and hydraulically distant from Highland water storage
8 tank. This project is part of an integrated system upgrade to provide increased diurnal
9 demand equalization, fire protection storage, and water system reliability in Coronado
10 during an emergency event. The recommendations from the Coronado Reliability Supply
11 (Project I15-300014) are expected to be the basis for this project.

12
13 The City of Coronado is situated within California American Water's San Diego County
14 District Highland Pressure Zone. Most of the Highland Zone is located in Imperial Beach
15 and South San Diego. Coronado is connected to the Highland Pressure Zone by a 7-mile
16 long, 16-inch diameter water transmission main. However, since late 1970, Coronado's
17 water supply has been derived from an intertie with the City of San Diego water system at
18 Harbor Drive. A 24-inch transmission main (Transbay Transmission Main) extends from
19 Harbor Drive across San Diego Bay and connects to the north end of the Coronado
20 distribution system where the pressure is reduced to match the Highland Pressure Zone
21 gradient. Hydraulically, the Coronado section of the water system operates directly off the
22 Harbor Drive intertie. Experience indicates that the Harbor Drive source of supply pushes
23 water south approximately 6-½ miles from the First Street/A Avenue interconnection with
24 the Coronado distribution system to the area of the Coronado Cays along Highway 75.
25 Thus, water from the Highland Tank in South San Diego only reaches as far north as this
26 point. Coronado peak hour demands and fire flows are met from the City of San Diego
27 system via the Harbor Drive intertie and Transbay Transmission Main. Both hydraulic
28 modeling and operating experience indicate that if the Harbor Drive source of supply were

1 interrupted, pressures and fire protection within Coronado would be severely reduced. For
2 short-term interruptions, California American Water can activate its NAS North Island
3 Emergency Intertie with the Navy's water system to supply the Coronado service area.
4

5 The Transbay Transmission Main has been in service for nearly 50 years and is expected to
6 be internally inspected for the first time as part of the Coronado Reliability Supply (Project
7 I15-300014) since being placed into service. To improve water system resiliency in the
8 Coronado service area, construction of local storage along with provision of increased
9 transmission capacity from the Imperial Beach/South San Diego service area to Coronado
10 is required. With the above improvements in place, the Transbay Transmission Main could
11 be taken out of service for an extended period for possible rehabilitation assuming its
12 impending condition assessment determines that pipeline rehabilitation is appropriate to
13 extend the life of this critical asset.
14

15 The previously approved Strand Two-Way Pump Station Project (Project I15-300021) to
16 replace the non-functioning Strand Relay Station to serve as a two-way pump station is
17 expected to address the needed water transmission improvements noted above. However,
18 construction of local storage is expected to still be required in Coronado to provide
19 recommended fire flows during a long-term outage of the Transbay Transmission Main.
20 The 2019 San Diego District CPS indicates additional storage is appropriate for the
21 Highland Pressure Zone. The additional storage is best located in Coronado where it can
22 provide the most improvement to the local service system reliability.
23

24 California American Water recommends a 1.0 MG water storage tank be constructed in
25 Coronado. Local topography dictates that pumped storage be constructed to operate
26 Coronado on the HGL 221 pressure gradient. A pumping facility at the tank site which can
27 supply fire flows with the largest booster pump out of service is required. The final design
28 of the pumping facility should include pressure relief capability and the use of variable

frequency drives to meet variable system demands while ensuring robust protection against system over-pressurization and pressure transients.

Locating a suitable pumped storage tank site in Coronado is expected to be a challenge as the city is fully developed. The Coronado Reliability Supply (Project I15-300014) is expected to include a site investigation, including exploration of tank sites at the two Naval installations bracketing Coronado. Tank sites located remotely from the existing backbone transmission mains are expected to also require construction of corollary transmission main extensions to the tank site. Due to the uncertainty with project site selection outcome, a high-risk factor related to facility cost uncertainty is appropriate for this project.

2. Project Code I15-300023, Transbay Transmission Main Rehabilitation Project (PROPOSED PROJECT)

Q190. Please describe.

A190. This proposed project is for rehabilitation of the San Diego District Transbay Transmission Main. This transmission main has been in service for nearly 50 years and has not been internally inspected since being placed into service, therefore the current pipeline condition is unknown but is expected to be inspected in 2022. However, the transmission main has an impressed current cathodic protection system, and it is inspected by a corrosion control specialist firm that reports on its condition annually.

The previously approved Coronado Reliability Supply Project (I15-300014) is expected to provide preliminary engineering to initiate an internal condition assessment of the Transbay transmission main using advanced pipeline analytical inspection methods. Completion of the condition assessment is expected to give a better understanding of the condition of this critical asset, estimate its remaining useful life, and assess rehabilitation versus replacement alternatives.

1 The first phase funding of the Coronado Reliability Study and Transbay Assessment
2 Project also includes completion of a feasibility study for construction of local distribution
3 system storage within Coronado and assessment of alternatives to improve the source of
4 supply reliability to Coronado including construction of a booster pumping station on the
5 southern end of the Strand (Project I15-300021). The Strand Pump Station in conjunction
6 with a local pumped storage tank located in Coronado would end Coronado's sole reliance
7 on the Transbay Transmission Main to meet its water supply needs. With the above
8 improvements in place, the Transbay Transmission Main could be taken out of service for
9 an extended period for possible rehabilitation assuming its impending condition assessment
10 determines that pipeline rehabilitation is appropriate to extend the life of this critical asset.

11
12 Based upon the criticality of the Transbay Transmission Main and the current uncertainty
13 as to whether the Coronado Reliability Study and Transbay Assessment are expected to
14 identify a feasible location for construction of a pumped storage facility within Coronado,
15 it is recommended to plan for the eventual rehabilitation or possible replacement of the
16 Transbay Transmission Main. The appropriate timeframe for construction of a transmission
17 main rehabilitation or replacement project can be better estimated following completion of
18 its planned internal condition assessment in the Coronado Reliability Study and Transbay
19 Assessment (Project I15-300014) in December 2022. Rehabilitation of the existing
20 Transbay Transmission Main and pipeline replacement are the two options that are
21 expected to be considered based on the assessment results.

22
23 Horizontal directional drilling ("HDD") for installation of pipelines below waterbodies,
24 critical transportation arteries, and environmentally sensitive areas has become common
25 place over the past two decades. The existing Transbay transmission main consists of
26 approximately 3,800 linear feet of cement mortar coated and cement lined 24-inch welded
27 steel pipeline. Numerous HDD bores substantially longer and for larger diameter pipelines
28 than this have been completed.

1 Assuming a suitable alignment of similar length for a replacement main can be identified,
2 these criteria should not be an impediment to construction of a replacement transmission
3 main using HDD methods.

4
5 The viability of HDD is dependent on the subsurface stratigraphy through which the
6 pipeline bore will pass. Cohesive soils or bedrock are more conducive to ensuring
7 successful HDD construction than cohesionless sands and gravels or formations containing
8 a significant fraction of large cobbles. Comprehensive geotechnical evaluations and reports
9 along the proposed HDD alignment are therefore expected to be an integral prerequisite to
10 detailed design and construction.

11
12 HDD construction does require significant construction work areas at both ends of the bore,
13 particularly on the side where the new carrier pipe will be pulled into the bore.

14 Identification of an appropriate pipeline alignment is expected to require consideration of
15 these construction requirements. Temporary, and possibly permanent, easements may be
16 required along with procurement of permits from the San Diego Port Authority and the
17 State.

18
19 **3. Project Code I15-300026, Main Replacement Program (2024-2026)**
20 **(PROPOSED PROJECT)**

21 Q191. Please describe this program.

22 A191. This proposed program is a continuation of a previously approved program I15-300024 for
23 main replacements in the San Diego County District. This is a three-year program that is
24 expected to start in January of each year and end in December of the same year. California
25 American Water's Coronado system dates back to the 1880s and a pipe renewal and
26 replacement program is needed to continue to deliver a high level of service to customers.
27 This project is aligned with the overall customer service level goals of the Company.
28

1 In 2019, a CBA for Buried Infrastructure was completed. That CBA evaluated the
2 condition and performance of pipe in the San Diego system and prioritized the portions of
3 the distribution system that should be replaced. Additionally, the 2019 CPS used an
4 updated hydraulic model to identify water mains that need to be replaced or upsized based
5 on hydraulic restrictions and fire flow capacity. Mains identified as part of this project are
6 intended to improve pipeline performance including increasing hydraulic capacity (both for
7 domestic service and fire protection), improving water quality by replacing pipe with
8 known internal tuberculation and corrosion, and reducing the number of main breaks in the
9 system that disrupt customer service and the community in general, contribute to water
10 loss, and represent an additional concern for worker safety during water main repairs. The
11 local operations staff are responsible for prioritizing and selecting the replacement projects
12 they expect to complete for each year from 2024 to 2026 using the list prepared in the
13 CPS/CBA. This is expected to provide flexibility in selecting the projects to be constructed
14 for each year so that it coincides with city street paving.

15
16 **4. Project Code I15-300027, San Diego Alternative Source of Supply**
17 **Project (2024-2026) (PROPOSED PROJECT)**

18 Q192. Please describe.

19 A192. This proposed project is the implementation phase of the Alternative Source of Supply
20 planning study completed in 2022, which investigated options for providing source water
21 or diversifying the San Diego County District water supply portfolio. The study
22 investigated potential options for bringing source water into the system and providing
23 redundancy to the system. Water supply in Southern California is highly dependent on
24 imported water from the Colorado River and Northern California. The vulnerability of
25 Southern California water systems to short-term and long-term reductions in imported
26 water are well documented. Efforts to bolster water system resiliency against the impacts
27 resulting from reductions in imported water have been underway for decades and continue
28 to accelerate as California enters prolonged periods of droughts. Currently, the San Diego

1 County District relies solely on purchased water from the City of San Diego. Purchased
2 water is primarily imported which makes the service area vulnerable in drought years when
3 water purveyors are required to cut back their service area demands.

4
5 This study included looking into new water sources such as well water, additional
6 interconnections, and reducing the potable water use by investigating recycled water
7 options. The options were each considered and vetted to develop a potential project to
8 implement. From the study, the preferred option was to drill a pilot well and plan for
9 installing a new groundwater well to provide additional source water into the San Diego
10 County District. Since the extent of the information on groundwater conditions within the
11 California American Water service area is limited, a test well drilling project is
12 recommended to determine well yield and water quality at site specific feasible drilling
13 locations prior to construction of a potential new production well. It is recommended that a
14 test well drilling program be developed for the Well # 8 site to assess its viability to again
15 serve as a production well site, primarily for the purposes of increasing the security of the
16 source of supply for California American Water's San Diego Country District should
17 curtailments in its purchased water supply occur during prolonged drought conditions. A
18 small diameter test well, 6 to 8 inches in diameter, would be drilled to a depth of at least
19 750 feet. The target test well yield would range from approximately 350 to 500 gpm.

20
21 The California American Water Well # 8 site was recommended since it eliminates land
22 acquisition costs and due to its historical use as a water supply and its potentially favorable
23 water quality, well yield, proximity to desirable hydrogeologic formations and it is located
24 close to existing California American Water transmission facilities. Following the
25 completion of the new test well, a pump test would be conducted to quantify the well yield.
26 Water quality sampling would be conducted to determine if the well could meet drinking
27 water standards or if treatment for brackish water is needed. The Test Well Program report
28 would include a summary of the hydrologic conditions of the aquifer, anticipated well yield

for a possible production well, a characterization of water quality, and recommendations for either its conversion to a production well or drilling a new nearby production well.

This project was identified in the 2022 San Diego Alternative Source of Supply Study.

C. Los Angeles County District Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

Los Angeles County Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-500074	LA-Main Replacement Program (2024-2026)	Annual	\$18,655,385	\$5,640,989	\$6,507,198	\$6,507,198
I15-500075	LA-Pump Station and PRV Rehabilitation Program (2024-2026)	Annual	\$3,171,607	\$1,050,645	\$1,060,481	\$1,060,481
I15-500076	LA-SCADA Maintenance and Improvements Program (2024-2026)	Annual	\$1,340,352	\$614,340	\$363,006	\$363,006
I15-500077	LA-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	Annual	\$17,681,522	\$3,512,620	\$8,855,562	\$5,313,340
I15-500078	LA-Well Installation and Replacement Program (2024-2026)	Annual	\$7,285,170	\$2,382,906	\$2,451,132	\$2,451,132
I15-500079	LA-Well Rehabilitation Program (2024-2026)	Annual	\$2,182,502	\$433,256	\$874,623	\$874,623

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-500080	LA-Tank Replacement Program (2024-2026)	Annual	\$6,651,765	\$1,841,337	\$2,405,214	\$2,405,214
I15-500081	LA-Standby Generator Improvement Program (2024-2026)	Annual	\$1,904,750	\$630,408	\$637,171	\$637,171
I15-560001	EP-East Pasadena Well #8 Treatment	2022-2025	\$3,356,984	\$1,335,511	\$2,021,473	\$0
I15-560002	EP-East Pasadena Booster Station Improvement Program	2024-2026	\$1,308,640	\$352,020	\$546,640	\$409,980
I15-560003	EP-Raymond Basin Replacement Well	2024-2026	\$4,904,547	\$1,624,709	\$2,186,558	\$1,093,280
I15-560004	EP-East Pasadena Mountain View Land Purchase	2022	\$0	\$0	\$0	\$0
I15-560005	EP-East Pasadena Woodward Tanks Replacements	2025-2026	\$2,361,487	\$0	\$472,297	\$1,889,190
I15-570002	ER-El Rio Supply Project	2024-2026	\$3,237,046	\$965,077	\$1,298,269	\$973,700
I15-570003	ER-El Rio Pump Station Facility Improvements	2024-2026	\$1,678,536	\$618,472	\$936,394	\$123,670
I15-570004	ER-El Rio WTP Chlorine Facility Improvements	2024-2024	\$297,863	\$297,863	\$0	\$0
I15-570005	ER-El Rio Well 2 Nitrate Treatment	2024-2026	\$1,366,600	\$0	\$273,320	\$1,093,280

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-570006	ER-Small Main Replacement Program	2024-2026	\$817,425	\$270,785	\$273,320	\$273,320
I15-570007	ER-El Rio Tank Replacements	2026-2028	\$546,640	\$0	\$0	\$546,640
I15-570008	ER-El Rio System Looping	2026-2028	\$437,200	\$0	\$0	\$437,200
I15-800001	BELL-Bellflower Main Replacements	2022-2023	\$0	\$0	\$0	\$0
I15-800001	BELL-Bellflower Main Replacements - Contributions	2022-2023	\$0	\$0	\$0	\$0
I15-800002	BELL-Bellflower Main Replacement Program (2024-2026)	Annual	\$3,269,697	\$1,083,139	\$1,093,279	\$1,093,279
	Total		\$82,455,718	\$22,654,077	\$32,255,937	\$27,545,704

LA - Los Angeles
EP - East Pasadena
ER – El Rio
BELL – Bellflower

1. Project Code I15-500074, LA-Main Replacement Program (2024-2026)
(PROPOSED PROJECT)

Q193. Please describe this program.

A193. This proposed project is expected to continue a programmatic investment program to allow for the planned, prioritized, and regular replacement of the mains, which have been identified through the CBA or through hydraulic analysis of the systems, and pressure relief valves as needed, to enable the new or replaced pipes to properly function.

1 The 2019 Los Angeles County CPS identified nearly 30 miles of pipe for replacement
2 throughout the Los Angeles County District. Of that, about 23 miles were identified
3 through hydraulic modeling as being necessary to meet fire protection standards and
4 forecasted customer demands. An additional seven miles were identified as having a high
5 likelihood of failure and consequence factors per the CBA. As such, it is recommended that
6 4.9 miles of pipe be replaced annually. This program would enable California American
7 Water to take proactive measures to minimize reactive replacements which tend to result in
8 higher costs later.

9
10 This program is identified as part of the 2019 Los Angeles County CPS.

11
12 **2. Project Code I15-500075, LA-Pump Station and PRV Rehabilitation**
13 **Program (2024-2026) (PROPOSED PROJECT)**

14 Q194. Please describe this program.

15 A194. This proposed project is a continuation of California American Water's program to
16 rehabilitate booster pump stations throughout the Los Angeles County District. The scope
17 of work associated with this project is the result of the 2019 CPS and consultation with
18 Operations staff. The 2019 CPS recommendations range from improving site conditions to
19 full BPS replacements. Site specific recommendations can be found in the 2019 CPS.

20
21 The Los Angeles County District has a total of 16 BPSs. Eight of the 16 BPSs have started
22 or completed the capital improvement projects developed in the 2012 CBA and 2012 CPS.
23 The 8 BPSs that have started or completed the capital improvements are Garth, Lamanda
24 Park, Olympiad, Rosemead, Scott, Mount Vernon, Oak Knoll, and Las Lomas. The
25 recommended BPSs that are expected to be rehabilitated under this project include Spinks
26 BPS, Monterey BPS, Patton BPS, and Danford BPS. The rehabilitation of the BPSs is
27 expected to provide safer working environments for employees, improve the efficiency of
28

1 the BPSs, and meet the existing demand conditions and projected growth of the service
2 areas.

3
4 This project is identified as part of the 2019 CPS.

5
6 **3. Project Code I15-500076, LA-SCADA Maintenance and Improvements**
7 **Program (2024-2026) (PROPOSED PROJECT)**

8 Q195. Please describe this program.

9 A195. This proposed program is a continuation of the previously approved 2018-2020 GRC
10 program for the SCADA equipment and automation upgrades of remote sites within the
11 Los Angeles County District. The proposed program is expected to replace equipment
12 described in the Los Angeles County District SCADA Master Plan. This program is
13 expected to implement upgrades to the SCADA system including automation, new
14 equipment, and electrical safety improvements. This program would consider alternatives
15 to define and plan implementation of SCADA improvements based both on business
16 requirements and current technologies.

17
18 A significant investment in SCADA equipment has been made to provide better monitoring
19 and control of California American Water facilities throughout the Los Angeles County
20 District. To maintain this system, continued maintenance and updates to SCADA systems
21 and equipment must be performed. SCADA equipment has a short lifetime of 5-15 years,
22 and therefore requires continual maintenance and replacement. The Los Angeles SCADA
23 Master plan listed SCADA related components at each site including flow meters, pressure
24 transducers, SCADA cabinets, batteries, UPS, antennae, fans, and cellular radios. The
25 listed SCADA assets have a typical lifespan and need to be replaced on a regular basis.
26 This program is expected to replace components that are at the end of their useful life.
27 Many locations require updated data collection, transmitters, SCADA system connections,
28 and automated operation upgrades to integrate fully into the existing SCADA system.

1 The goals of this program will be to establish a clear vision and governance of the SCADA
2 system, provide reliable communication to all sites, make the SCADA system a priority
3 source for system data, and establish an automation and equipment upgrade program. This
4 is expected to enable California American Water to make continued investments efficiently
5 and effectively in SCADA as the equipment has a finite life and requires ongoing
6 maintenance and replacement.

7
8 This program is identified as part of the 2019 Los Angeles County CPS and in the 2022
9 Los Angeles SCADA Master Plan.

10
11 **4. Project Code I15-500077, LA-Tank Rehabilitation and Seismic**
12 **Upgrades Program (2024-2026) (PROPOSED PROJECT)**

13 Q196. Please describe this program.

14 A196. This program is intended to maintain and replace the storage tanks in the district. Storage
15 tanks allow the Los Angeles County District's four service areas (Baldwin Hills, Duarte,
16 East Pasadena, and San Marino) to meet DDW requirements in meeting MDD and PHD. In
17 addition, the service areas are recommended to have the supply capacity and storage to
18 meet fire flow demands during MDD conditions. By maintaining the tanks, California
19 American Water maintains essential storage to allow peak demands to be met without the
20 need to develop additional source of supply capacity.

21
22 The 2019 Los Angeles County District CPS estimated that seismic upgrades that will be
23 needed and recommended completion of a tank seismic study. This study is underway and
24 is expected to be completed in 2022. The results of the study are expected to be a
25 prioritized list of recommendations to bring each tank into conformance with current
26 seismic codes. The recommended projects are expected to be included in this program.
27 Initial results of the study have prioritized replacement of the Patton, Danford, and Oak
28 Knoll tanks.

1 Rehabilitation of the storage tanks in the Los Angeles County District is expected to be
2 beneficial in extending the service lives of the tanks district-wide. Following the tank
3 maintenance and rehabilitation schedule is expected to ensure that the tanks are available as
4 reliable sources of water storage and supply. A proactive approach to rehabilitation is
5 expected to also help identify existing or potential problems with the district's storage
6 tanks. Some of these improvements include lowering tank operating levels, providing
7 additional mechanical anchorage between the tank and foundation, increasing shell
8 thicknesses, and increasing the tank shell height to accommodate higher freeboard
9 requirements are options that can be considered on a site-by-site basis. Installing new
10 perimeter ring beams with anchor bolts that can be welded to the existing tank shells is an
11 option that has been successfully implemented in select applications. In addition to this, it
12 is also recommended to install Earl Bradley and Associates Iron or similar couplings that
13 allow for movement between the tank and inlet or outlet piping. Making seismic upgrades
14 as described is expected to help protect the tanks in the case of a future seismic event.

15
16 This program is identified as part of the 2019 Los Angeles County CPS and in the 2022
17 Los Angeles Tank Seismic Study.

18
19 **5. Project Code I15-500078, LA-Well Installation and Replacement**
20 **Program (2024-2026) (PROPOSED PROJECT)**

21 Q197. Please describe this program.

22 A197. This program is a continuation of the previously approved Well Installation and
23 Replacement Program from the 2019 GRC. This program is intended to add or replace
24 wells in the Los Angeles District during the 2024-2026 timeframe. New well installation
25 and/or replacement is needed throughout the Los Angeles County District to continue to
26 meet current demands and projected increases in demands. New wells increase service area
27 capacity and allow California American Water to continue to meet future demands.
28 Replacement wells are expected to allow abandonment of aging and/or contaminated wells,

1 minimizing maintenance costs. Many of the existing wells in the Los Angeles County
2 District are nearing or have already exceeded their 50-year service life and service area
3 capacity has been decreasing over time. These aging wells exhibit low or decreased
4 capacity due to contamination and decreasing groundwater levels and require frequent
5 rehabilitation or the addition of treatment facilities to maintain their capacities. Many of
6 these wells are inactive or producing at significantly lower capacities than originally
7 designed. New well construction methods result in higher capacities at individual wells and
8 allow more effective, less frequent rehabilitation. By decreasing the overall number of
9 wells in the service area while maintaining or increasing service area capacity, California
10 American Water can limit maintenance costs. When wells with water quality issues are
11 properly abandoned, these actions would prevent the need for additional maintenance and
12 monitoring costs.

13
14 Of the 30 wells in the Los Angeles County District, 14 are over 50-years old. All three Los
15 Angeles County District service areas rely on groundwater to provide a significant portion
16 of their water supply. Having sufficient well production capacity helps California
17 American Water to meet average day demands, maximum day demands, peak hour
18 demands, and maximum fire flow standards.

19
20 In addition to age, water quality issues have rendered some wells to be inactive or operated
21 at lower capacities. To minimize maintenance/treatment costs and maintain service area
22 capacity, California American Water operators have identified wells with water quality
23 issues that may need to be replaced with a new well at a different site. It is anticipated that
24 even if wells are redrilled, treatment may be needed as known contamination plumes are
25 present in certain areas throughout the Los Angeles County District, especially in Baldwin
26 Hills and San Marino service areas. To determine whether an individual well should be
27 abandoned or replaced under this program, the following should be considered: age of the
28 well, method of construction, historical records of rehabilitation or repair (extent,

frequency), video inspection of the structural condition of casing and/or intake screen, specific capacity changes (decline and recovery), existing capacity, water quality changes, sand production, site features (access, disposal facilities), and expected cost and capacity of a new well.

Several wells have already been recommended for replacement in the 2022 Los Angeles Well Master Plan. These recommendations are based on factors including but not limited to age, condition, reduced capacity, and/or water quality.

In summary, these aging wells in the Los Angeles County District require ongoing maintenance, rehabilitation, and replacement of above and below ground facilities to continue to provide safe and reliable water supply to California American Water customers. This well installation and replacement program is expected to: 1) increase system reliability; 2) maintain system capacity; 3) avoid catastrophic failures; 4) minimize potential violations issued by the DDW; 5) extend the useful life of the well facilities; 6) improve operability; 7) improve site aesthetics; 8) improve site safety; 9) increase customer satisfaction; and, 10) decrease future unanticipated costs.

This program is identified as part of the 2019 Los Angeles County CPS and in the 2022 Los Angeles Well Master Plan.

**6. Project Code I15-500079, LA-Well Rehabilitation Program (2024-2026)
(PROPOSED PROJECT)**

Q198. Please describe this program.

A198. This program is a continuation of the 2019 GRC approved Well Rehabilitation Program (I15-500070). To continue providing a reliable supply, California American Water proposes to continue with rehabilitation of well facilities, including rehabilitation, maintenance, and replacement of well components.

Regular well maintenance is essential in maintaining the existing capacity of the Los Angeles County District's wells. California American Water should continue to actively monitor well yield and groundwater levels for any drops in capacity that would necessitate potential well rehabilitations. The number of wells out of service due to contaminated groundwater supplies and aging well infrastructure has been increasing causing a greater dependence on imported sources and higher production costs from imported water supplies. Previously specific projects were recommended for well replacement or rehabilitation. This new proposed project is expected to allow for the flexibility of performing well improvements based on current needs. It should be noted that changes in well production are common and happen on an annual basis, which can alter priorities on capital improvement needs.

California American Water has already made a significant investment in the Well Rehabilitation and Sustainability Assessment Programs in other districts. A similar program is expected to be developed for wells owned and operated by California American Water in its Los Angeles County District. This program is expected to prioritize and schedule well rehabilitation improvements based on need, safety, and well performance. The Program is expected to also address the long-term sustainability of the well supply systems including routine maintenance, major equipment replacement or well rehabilitation, and complete well replacement.

**7. Project Code I15-500080, LA-Tank Replacement Program (2024-2026)
(PROPOSED PROJECT)**

Q199. Please describe this program.

A199. This program is intended to construct new tanks in the LA District. The Los Angeles County District is required by DDW to have enough source capacity to meet MDD at all times and the ability to meet four hours of PHD using a combination of source of supply capacity and storage facilities. Due to their age and condition, the Starpine Reservoir,

1 Danford Reservoir, Oak Knoll Reservoir, and Angeles Mesa Tank should be replaced to
2 ensure adequate water supply reliability. This is expected to allow California American
3 Water to maintain essential storage to allow peak demands to be met without the need to
4 develop additional source of supply capacity.

5
6 The Angeles Mesa Tank is a 3.7 million-gallon (“MG”) concrete tank in the Baldwin Hills
7 service area and was installed in 1932. It is in poor condition and although recent repairs
8 have fixed major leaks, the general condition of the tank is poor. Reconstruction of a new
9 tank at this location is expected to be problematic given that the site is surrounded by
10 residential homes so building a tank within the existing tank may be the preferred option
11 for this site.

12
13 The Oak Knoll Reservoir is a 2.5 MG partially buried concrete tank in the San Marino
14 service area. This project was previously approved for rehabilitation but has been requested
15 to be evaluated as a part of the Tank Seismic Assessments project. It was installed in 1916
16 and requires replacement.

17
18 The Danford Reservoir is a 2.0 MG partially buried concrete and earthen berm tank in the
19 San Marino service area. It was installed in 1912.

20
21 The Starpine Reservoir is a 0.34 MG steel tank in the Duarte service area and was built in
22 1997. This reservoir is too small to meet projected customer demands and fire flow
23 requirements and should be upsized to 1.0 MG. It should be noted that adequate space for a
24 larger tank may be cumbersome at the existing site and that alternative tank locations is
25 expected to need to be investigated as a part of this project.

26
27 The tank seismic assessments completed in 2022 is expected to be the basis for replacing
28 these tanks beginning with the highest risk tank identified in the Los Angeles Tank Seismic

Study, the 2019 Los Angeles County District CPS and the regular TIC tank assessments. Design for replacement tanks is expected to occur in 2024, with construction beginning in late 2024 and continuing into 2026.

8. Project Code I15-500081, LA-Standby Generator Improvement Program (2024-2026) (PROPOSED PROJECT)

Q200. Please describe this program.

A200. This 2024-2026 program is a continuation of the 2019 GRC approved Standby Generator Program (I15-500065). This program is intended to add generators to select sites across the Los Angeles County District. General Order 103A requires water utilities to have adequate redundancy and reliability for critical equipment. California American Water's policies require at least 100 percent of average day demand to be provided during a utility power outage in its systems. California American Water uses standby generators to provide this emergency backup power to primary water facilities.

The Emergency Power Study is being completed in early 2022 and California American Water is expected to prioritize from the list of recommendations from the report. The sizes of these generators depend on the site, and some sites are expected to need additional equipment to accommodate a permanent generator, such as electrical upgrades and transfer switches. This program is expected to allow California American Water to install generators at sites which will aid in ensuring all pressure zones will have the capability of supplying average day demands during a loss of power event.

9. Project Code I15-560001, East Pasadena Well #8 Treatment (2022-2025) (PROPOSED PROJECT)

Q201. Please describe.

A201. As noted in a compliance order by the State Water Resources Control Board, dated August 27, 2020, the East Pasadena system does not have adequate supply sources to meet

1 estimated MDD. Currently Well 9 and Well 11 are the two wells serving the system.
2 According to the Main San Gabriel Basin Watermaster, both wells are allowed to operate
3 simultaneously to meet peak demands. However, if one of these wells goes out of service
4 for any reason, such as water quality or mechanical failure, the remaining well cannot
5 supply maximum day demands for the system. For this reason, it is important to install
6 treatment at Well #8 and bring it back online. Well 8 was taken out of service in the middle
7 of 2020 due to water quality issues. This well is located at the Mountain View Plant near
8 the intersection of Mountain View Avenue and Walnut Court. It draws from the Raymond
9 Basin and was last used for domestic production in 2018. In a 2020 compliance order, the
10 State Water Resources Control Board noted that this well was drilled in March 1937 and
11 has a design capacity of 850 gpm. Although records are incomplete, it is believed that the
12 well was rehabilitated in the 1960's. The well has experienced sand issues and has a
13 desander. The water has elevated levels of 1,2,3-trichloropropane ("1,2,3-TCP") exceeding
14 the MCL of 0.000005 mg/L. The well also has elevated levels of nitrates.

15
16 Previous planning work identified a project to implement GAC treatment at Well #8, a new
17 well pump for Well #8, a 2,800-foot blending pipeline to connect the Mountain View Plant
18 and the Woodward Plant, and booster pump upgrades. The recommended site for treatment
19 is the parcel immediately east of the well, across Walnut Court and is anticipated to be
20 purchased by California American Water in late April or May of 2022 under I15-560004.
21 This parcel is owned by the previous owner of the East Pasadena Water Company. The
22 recommended solution is to construct the proposed GAC treatment system at Well #8, the
23 associated upgrades at Well #8, and the blending pipeline and booster station upgrades to
24 allow blending of supply between the Woodward Plant and the Mountain View Plant at the
25 newly purchased property. The target inlet concentration to the GAC will be 50% or less of
26 the MCL for nitrate. Design and permitting efforts are expected to require the acquisition
27 of a Conditional Use Permit from Los Angeles County, as well as building and right of way
28 permits. The 2022 East Pasadena Comprehensive Planning Study identified this project and

provides additional details. Once Well #8 is brought back into service with treatment, the maximum day supply deficit is expected to be resolved, and the East Pasadena system is expected to meet supply capacity requirements. This project will begin preliminary design in 2022 and construction is expected to be completed in 2025.

10. Project Code I15-560002, East Pasadena Booster Station Improvement Program (2024-2026) (PROPOSED PROJECT)

Q202. Please describe.

A202. The 2022 East Pasadena CPS evaluated the system for storage and pumping capacity. The study determined that the East Pasadena system has deficiencies in each of the three zones firm pumping capacity. Improvements to pump stations are expected to provide reliable pumping capacity and assist Operations to maintain system delivery and pressure. The booster pumps serving Zone 1 do not have sufficient firm capacity to meet PHD. The existing firm pumping capacity serving Zone 2 is not adequate to meet MDD. Because Zone 2 does not have any floating storage, fire flow in the zone must also be met with booster pumping capacity. The East Pasadena Water system's current supply comes from Wells 9 and 11, located at the Duarte Plant. Output from the wells is pumped into Tank 4 and then pumped through booster pumps into Zone 3. An additional booster pump sized to deliver at least 1,400 gpm is recommended to meet pumping criteria under future demands.

The alternatives and available pump and pipeline improvements are expected to be refined during the preliminary design phase of the project to select the best improvement options.

This project is expected to provide an additional water supply to zones within the East Pasadena system and help meet demands and capacity within the distribution system.

11. Project Code I15-560003, East Pasadena Raymond Basin Replacement

1 **Well (2024-2026) (PROPOSED PROJECT)**

2 Q203. Please describe.

3 A203. As noted in a compliance order by the State Water Resources Control Board, dated August
4 27th, 2020, the East Pasadena system does not have adequate supply sources to meet
5 estimated MDD.

6
7 The East Pasadena system has two operating wells. Both wells are in the Main San Gabriel
8 Basin, Wells 9 and 11. Both wells are located at the Duarte Plant on Duarte Road. Under
9 direction from the Main San Gabriel Basin Watermaster, Wells 9 and 11 are not to be
10 operated simultaneously. With only one well in operation, a supply deficit of nearly 160
11 gpm exists under MDD conditions. It is recommended that California American Water
12 explore additional supply options, including construction of an additional potable
13 well. One potential location for a new well is across the street from the existing Well #8.
14 This well would be located in the Raymond Basin. Since its water quality would likely be
15 similar to Well #8, it would likely have elevated 1,2,3-TCP and nitrate. It would therefore
16 also require GAC treatment and blending for nitrate. Construction of a new well is
17 expected to provide adequate supply to meet MDD and bring the East Pasadena system
18 back into compliance with the State Water Resources Control Board. This project would
19 require a Conditional Use Permit from Los Angeles County and building and right of way
20 permits.

21
22 **12. Project Code I15-560004, East Pasadena Mountain View Land**
23 **Purchase (2024-2026) (PROPOSED PROJECT)**

24 Q204. Please describe.

25 A204. As noted in a compliance order by the State Water Resources Control Board, dated August
26 27th, 2020, the East Pasadena system does not have adequate supply sources to meet
27 estimated MDD. In addition, other proposed Raymond Basin Well replacement projects
28 including Winston Well at Danford and Oswego Wells have not been able to move

forward. Therefore, the purchase of this property is necessary to locate the well #8 treatment system and for a proposed Raymond Basin Replacement Well. The property is located across from the existing East Pasadena office and is expected to also serve as an area for Operations to use for storage. This property is expected to also be used for drilling of a Raymond Basin Replacement Well that is discussed further under I15-560003. This is expected to further help to keep well and treatment facilities at one centrally located site for the East Pasadena system.

A purchase agreement between California American Water and the previous owner California-Michigan Land and Water Company was executed on March 31, 2022. The purchase of the property is currently in escrow and the anticipated closing date of the property sale is late April or early May of 2022.

13. Project Code I15-560005, East Pasadena Woodward Tank Replacement (2024-2026) (PROPOSED PROJECT)

Q205. Please describe.

A205. Tanks 2A and 2B at the Woodward Plant site do not meet current seismic requirements. A recent Los Angeles Tank Seismic Study recommended lower operating levels for these tanks, which is expected to reduce the available volume in storage and is not an option without increasing storage. At the time of the East Pasadena CPS, the Los Angeles County Tank Seismic Study was being conducted concurrently and recommended lowering tank levels to comply with seismic standards but due to the need for that storage the final recommendation was to replace Tanks 2A and 2B. Replacing existing Tanks 2A and 2B is expected to allow California American Water to meet seismic requirements while proactively safeguarding quality and supply reliability in the East Pasadena system. Design, administration, permitting, and other associated project costs are based on set percentages based on the estimated cost for construction. The contingency level is estimated as 4 (moderate risks) for this project.

This proposed project is planned to begin in 2025 with design and permitting phase followed by construction.

14. Project Code I15-570002, El Rio Supply (PROPOSED PROJECT)

Q206. Please describe.

A206. This investment project would provide additional supply for the El Rio Water System to meet maximum day demand plus fire flow conditions. The El Rio system is currently supplied by two groundwater wells. If Well #2, with a production capacity of 700 gpm, were to fail or be taken offline, then Well #3 at a production capacity of 500 gpm would not have sufficient capacity to meet peak hour demands. The two aging wells in the system require ongoing maintenance, rehabilitation, and replacement of above-ground and below-ground facilities to continue to provide safe and reliable service to customers. Since the existing system fire flow utilizes the well production to meet fire flow requirement, if a well is lost or out of service, it creates a vulnerability. This can be resolved by two options with the first being to add a new well into the system and the second being to add a new storage tank.

California American Water recommends moving forward with planning and construction of a new groundwater well to satisfy peak hour demands and maximum day demands plus fire flow conditions. Providing an additional source of supply to this system would increase the reliability of supply and would allow the system to continue to meet customer demands and firefighting needs if a well needed to be taken out of service. A potential site for the proposed well is the Rio Plaza Elementary School that would require an easement as well as coordination with Fox Canyon Groundwater Management Agency and Division of the State Architect permit review approval.

This project was identified in the 2022 El Rio CPS.

**15. Project Code I15-570003, El Rio Pump Station Facility Improvements
(PROPOSED PROJECT)**

Q207. Please describe.

A207. This investment project would replace the electrical switchgear, Motor Control Center (“MCC”), generator and booster pump station at the El Rio WTP because the switchgear is a potential safety hazard for California American Water’s operations staff. The existing electrical equipment is not currently housed in suitable enclosure. The existing enclosure is rated for indoor use and is made from wood, which is susceptible to damage from rain infiltration, arc flash conditions, and malevolent threats. Additionally, the electrical panel has limited access for repairs, water does not drain properly, and the panel is twisting/leaning from structural deterioration of the steel pole support. In addition, the system’s current generator is antiquated and is not sized to meet the electrical loads of planned improvements to the system’s electrical switchgear and MCC. This project also includes the installation of a new generator to ensure reliable water service.

The El Rio system has one booster pump station which pressurizes hydropneumatic tanks. The existing booster pump is a 40 Hp Berkeley with a 12.5-inch diameter. This booster pump was installed in 1997 and serves the entire El Rio water system. The El Rio service area ranges in elevation from 90 feet to 95 feet above sea level. This system would lose water pressure almost immediately if the current pump station were to go offline. Due to the age of the pumps and piping, the integrity of the existing concrete pad, and a leaky and poorly constructed enclosure, the existing booster pump station is due for replacement. A significant water hammer is also observed each time the pumps cycle on and off.

It is recommended California American Water demolish the existing hydropneumatic tanks, install new VFD driven booster pumps, a new booster pump station pad, suction, and discharge piping. It is recommended the VFD driven booster pumps match existing head and flow conditions. This project would need to follow implementation of electrical

improvements, as the variable frequency drives installed as part of that project must be in place. The electrical improvements recommendation is to install a new MCC line-up in a NEMA 4X enclosure. The MCC is expected to include new VFDs for the new booster pumps and one soft starter for Well #2. The power and signal conduit to Well #3 is expected to be intercepted and a pull box is expected to be installed to transfer power when the new MCC is energized.

It is also recommended that California American Water upgrade the system's current generator to a generator sized with an automatic transfer switch capable of handling the electrical load of the entire facility to provide reliable power to the system, including system wells, boosters, chemical pumps, and SCADA system during power outages.

This project was identified in the 2022 El Rio CPS.

**16. Project Code I15-570004, El Rio WTP Chlorine Facility Improvements
(PROPOSED PROJECT)**

Q208. Please describe.

A208. This investment project is for the improvement of the sodium hypochlorite storage at the El Rio WTP. The existing storage room represents a safety hazard for California American Water's operations staff and does not meet current OSHA and Fire Code safety standards for chemical storage. Water pumped from the groundwater basin is disinfected using sodium hypochlorite, which is metered directly into the onsite water storage tanks. Presently, there is no means of varying the dosing of sodium hypochlorite depending on which well is in operation, despite the different production rates from each well. The existing sodium hypochlorite storage and pumping enclosure is constructed of wood, which is susceptible to rain infiltration, corrosion from the chemicals stored in the facility, natural hazards, and malevolent threats. There is also no active ventilation inside the enclosure, which represents a safety hazard for operations staff.

1 It is recommended that California American Water install a chemical resistant fiberglass
2 reinforced plastic enclosure with automatic exhaust fans and louvers, and a chlorine feed
3 system capable of flow pacing sodium hypochlorite to each well.
4

5 This project was identified in the 2022 El Rio CPS.
6

7 **17. Project Code I15-570005, El Rio Well 2 Nitrate Treatment**
8 **(PROPOSED PROJECT)**

9 Q209. Please describe.

10 A209. This investment project would provide nitrate treatment to Well 2 to avoid loss of supply.
11 Nitrate levels have not exceeded the MCL, but they are trending up towards the MCL value
12 of 10 ppm. The El Rio Water System could potentially reach or exceed the nitrate MCL if
13 nitrate levels are not monitored, and precautionary actions are not implemented. Proactive
14 treatment is expected to avoid loss of supply should nitrate levels reach the MCL value.
15

16 A prepackaged treatment system is recommended to be constructed to treat nitrates. The
17 prepackaged nitrate treatment system is expected to provide protection of the existing water
18 quality, proactively safeguarding against supply interruptions and unsafe drinking water
19 conditions.
20

21 This project was identified in the 2022 El Rio CPS.
22

23 **18. Project Code I15-570006, El Rio Small Main Replacement Program**
24 **(PROPOSED PROJECT)**

25 Q210. Please describe.

26 A210. This proposed program would continue the replacement of mains in the El Rio distribution
27 system to increase system reliability. The distribution system contains small mains that are
28 aging pipe, and main breaks have occurred since California American Water acquired the

1 system in 2019. A large percentage of the pipe in the distribution system is small diameter
2 schedule 80 PVC, which is not recommended for buried water infrastructure. The glued
3 joints in schedule 80 PVC can result in premature failure from pressure swings within the
4 distribution system.

5
6 California American Water continues to address distribution system deficiencies in the El
7 Rio distribution system based upon current priorities and on-going replacement efforts.
8 Fire hydrants, valves, and services are expected to be replaced at the same time the main
9 improvement is completed. The small main replacement program is expected to maintain
10 system capacity, avoid catastrophic failures, increase customer satisfaction, and decrease
11 future unanticipated costs. This project was identified in the 2022 El Rio CPS.

12
13 **19. Project Code I15-570007, El Rio Tank Replacements (PROPOSED**
14 **PROJECT)**

15 Q211. Please describe.

16 A211. This proposed investment project would replace the two existing storage tanks in the El Rio
17 Water service area due to their age and the deteriorating condition. The 2022 El Rio CPS
18 identified the existing water storage tanks do not have adequate storage to provide fire
19 flow. A seismic study of the El Rio Water System identified Tank 1 was constructed in
20 1971 and replaced in 2009 and Tank 2 was constructed in 1993. Both tanks are composed
21 of bolted steel and have an expected operational life of 20 years. The seismic study
22 recommended replacement of the existing storage tanks designed with seismic restraints, as
23 the existing tanks do not have any seismic restraints. The 2022 El Rio CPS identified the
24 need to increase storage capacity to meet fire flow standards. Therefore, California
25 American Water is expected to replace the existing storage tanks as part of this project.

26
27 **20. Project Code I15-570008, El Rio System Looping (PROPOSED**
28

PROJECT)

Q212. Please describe.

A212. This investment project is expected to connect the El Rio distribution system so it can be looped for reliability, water quality, and to limit the amount of shutdowns for California American Water's customers. There was recently a water main break on Christmas Eve of 2021 at El Rio near the intersection of Cortez Street and Simon Way on the 8-inch water main on Simon Way. The water main break required half of the water system to be shutdown to complete the repair. The main on Simon Way conveys water to the other half of the system and is not looped. There are several options for the system to be looped.

The system can be looped from Cortez Street to Balboa Street on United Water Conservation District property and would require an easement. The system can also be looped on Corsicana Drive, in the Rio Plaza Elementary School's fence, or on Simon Way. California American Water recommends the best solution is to loop the system from Cortez Street to Balboa Street on United Water Conservation District property by installing an 8-inch water main. An easement is expected to need to be acquired from United Water Conservation District for California American Water to access, operate, and maintain the 8-inch main.

This project was identified in the 2022 El Rio CPS.

**21. Project Code I15-800001, Bellflower Main Replacements (2022-2023)
(PROPOSED PROJECT)**

Q213. Please describe.

A213. In 2021, the Bellflower Buried Infrastructure CBA was prepared in part to assist California American Water to develop prioritized and planned asset upgrades and replacement programs. For water mains, the CBA asset categorization combines an assessment of likelihood of failure (based primarily on physical pipe characteristics as well as the

1 frequency of reported repairs) and consequence of failure (based on factors including a
2 criticality analysis and population density) to assign an estimated priority to pipes. A series
3 of parameters pertaining to both likelihood and failure and consequence of failure were
4 established and scored. Per pipe, scores for likelihood of failure/consequence of failure
5 were respectively summed to create a comprehensive likelihood and consequence of failure
6 score.

7
8 The total cost of pipe replacement is evaluated based on previous repair costs of each
9 respective system. Systems with large replacement costs are discussed with operators to
10 identify particular areas of concern, where quantitative data may have not been available.
11 Additionally, it is important to note that as infrastructure continues to age, likelihood of
12 failure increases and it is recommended that California American Water proactively budget
13 for their eventual replacement, and a programmatic annual approach is recommended as the
14 most cost-effective solution.

15
16 Improvement projects to the service areas' mains are included in these main replacement
17 projects for efficient implementation throughout the service area.

18
19 This project allows for main replacements to occur from a contribution by the City of
20 Bellflower in the amount of \$5 Million. The water main segments were selected from the
21 Bellflower CBA with coordination and review of the proposed water main segments by
22 City of Bellflower staff. The coordination helps to prioritize those water main replacements
23 with any proposed City of Bellflower planned street paving and to avoid any street
24 moratoriums of streets that were recently paved. The recommended solution is to continue
25 a programmatic investment program after this project once the \$5M contribution is
26 exhausted. At that point, California American Water is expected to continue with a main
27 replacement program in Bellflower which is further described under I15-800002. This
28

project is to allow for the planned, prioritized, and regular replacement of the mains which have been identified through the CBA analysis of the systems.

22. Project Code I15-800002, Bellflower Annual Main Replacement Program (2024-2026) (PROPOSED PROJECT)

Q214. Please describe.

A214. In 2021, the Bellflower Buried Infrastructure CBA was prepared in part to assist California American Water develop prioritized and planned asset upgrade and replacement programs. For water mains, the CBA asset categorization combines an assessment of likelihood of failure (based primarily on physical pipe characteristics as well as the frequency of reported repairs) and consequence of failure (based on factors including a criticality analysis and population density) to assign an estimated priority to pipes. A series of parameters pertaining to both likelihood and failure and consequence of failure were established and scored. Per pipe, scores for likelihood of failure/consequence of failure were respectively summed to create a comprehensive likelihood and consequence of failure score.

The total cost of pipe replacement is evaluated based on previous repair costs for each respective system. Systems with large replacement costs are discussed with operators to identify areas of concern, where quantitative data may have not been available.

Additionally, it is important to note that as infrastructure continues to age, likelihood of failure increases, and it recommended that California American Water proactively budget for their eventual replacement. A programmatic annual approach is recommended in this context as the most cost-effective solution. Improvement projects to the service areas' mains are included in this main replacement program for efficient implementation throughout the service area.

This program allows for main replacements to annually occur beginning in 2024 and continuing each year to perform both design and construction of water main replacements

that were recommended in the Bellflower CBA. This program is expected to help to replace those water main sections that are in need of replacement.

D. Ventura County District Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

Ventura County Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-510053	VEN-Ventura Freeway Crossing	2023-2026	\$3,814,693	\$324,942	\$1,530,591	\$1,959,160
I15-510057	VEN-Integrated Water Supply Project	2024-2026	\$2,181,489	\$541,570	\$1,093,279	\$546,640
I15-510058	VEN-Peak Supply Improvement Project (CMWD)	2024-2026	\$1,418,222	\$324,942	\$546,640	\$546,640
I15-510059	VEN-Pump Station Replacement and Rehabilitation Program (2024-2026)	Annual	\$4,254,663	\$974,825	\$1,639,919	\$1,639,919
I15-510060	VEN-SCADA Maintenance and Improvements Program (2024-2026)	Annual	\$1,047,359	\$321,347	\$363,006	\$363,006
I15-510061	VEN-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	Annual	\$1,946,435	\$541,570	\$546,640	\$858,225
I15-510062	VEN-Standby Generator Improvements	Annual	\$1,920,319	\$411,593	\$754,363	\$754,363

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
	Program (2024-2026)					
	Total		\$16,583,180	\$3,440,789	\$6,474,438	\$6,667,953

VEN – Ventura

1. Project Code I15-510053, Ventura Freeway Crossing (PROPOSED PROJECT)

Q215. Please describe:

A215. This investment project is expected to improve water supply reliability and redundancy to pressure zones within the Ventura County District that presently has only one source of supply through mains that cross Highway 101. It is anticipated that both of the existing highway crossings will need to be removed from service for maintenance, if not for an emergency, and there is currently no backup supply to these areas.

There is an existing easement and abandoned pipe crossing Highway 101 west of Borchard Road, between Lawrence Drive (north side of the Ventura Freeway) and Deerwalk Place (south side of the Ventura Freeway). This highway crossing could provide an additional redundant crossing in case one of the two existing crossings is removed from service in an emergency event or for maintenance. However, the existing pipe was abandoned, and it is anticipated to be crushed in multiple locations. Therefore, a new pipeline would be required to be installed along the corridor to interconnect the north and south mains. This project includes removal of the existing pipeline and installation of 2,000 linear feet of new 10-inch main along the existing easement and within the Ventura Freeway (Highway 101) crossing. Interconnections and valves on the south and north side of the Ventura Freeway (Highway 101) are required to connect to the existing system. This project is scheduled to

begin with design in 2023 and continue with construction starting in 2024 and completing in 2025.

This project was originally identified in the 2019 Ventura County CPS.

2. Project Code I15-510057, VEN-Integrated Water Supply (PROPOSED PROJECT)

Q216. Please describe.

A216. This proposed project is the implementation of recommendations provided from the Ventura Integrated Water Supply Master Plan study proposed in the 2019 GRC and repeated here for reference as a project. The development of groundwater wells and/or purchase of reuse water from neighboring communities such as the City of Thousand Oaks would be expected to reduce the quantity of water purchased by California American Water from the Calleguas Municipal Water District (“CMWD”) to meet current and future water system demands and increase the reliability of the system by providing alternative water sources. The Integrated Water Supply Master Plan will provide a summary of available groundwater and reuse water sources; the location of the sources relative to demands; the costs for purchase of water; and the costs for capital improvements, if any, to deliver water to the existing and/or future developed areas.

Currently, all water supplying the service area is purchased from the CMWD and is received at thirteen main turnouts in the Ventura County District water system. Amgen recycles water onsite for their own use, and the Los Robles golf course uses wells for a portion of their irrigation. Reuse and groundwater sources may be provided to supplement Amgen and golf course supplies and may result in higher quality water for irrigation. The use of reuse water and groundwater at other locations for irrigation, similar to Amgen and the golf course, may allow California American Water to offset water supply in the future.

California American Water is performing a master planning effort to determine the following: possible sources of groundwater (wells) and reuse water; potential reuse customers and water quality requirements; distribution system requirements; anticipated source water offset volumes; planning level cost opinions for alternatives; and overall groundwater and reuse water system feasibility. A test well may be drilled as part of the project to determine groundwater quality and quantity available. Future reuse water use may include implementation of indirect and direct potable reuse (“IPR” and “DPR”) projects to offset supply requirements. The Ventura Integrated Water Supply Master Plan study is expected to be completed in the Fall of 2022. The recommendations from the Ventura Integrated Water Supply Master Plan are expected to be implemented through this project including the installation of test wells.

This project was originally identified in the 2019 Ventura County CPS.

3. Project Code I15-510058, VEN-Peak Supply Improvement (PROPOSED PROJECT)

Q217. Please describe.

A217. This proposed project is related to the Ventura CMWD Plan study proposed in the 2019 GRC and repeated here for reference as a project. This investment project is expected to investigate peak use periods and develop a process to allow the Ventura County District system to minimize peaking charges during the peak summer demand periods. CMWD has installed continuous SCADA recording equipment at all turnouts. CMWD plans to institute a new peaking charge based upon instantaneous use and not on the average of the peak week. This could result in a higher capacity charge to California American Water. CMWD has indicated that it does not plan on instituting a new peaking charge at this time; however, this may happen at some point in the future if peak demand from CMWD customers nears their firm capacity. Water is purchased from the CMWD and is received at thirteen main turnouts in the Ventura County District water system. Currently CMWD

charges a capacity charge paid annually based on the average daily flow from the peak week of the previous year. The capacity charge is meant to penalize water systems that meet their peak demands using water from CMWD instead of internal system storage.

California American Water should perform a study to hydraulically model how water is brought into the Ventura County District system during the peak summer months to minimize the peaking charge as much as possible. The results of the study are expected to recommend SCADA upgrades and potential flow control equipment requirements at the turnouts. The study is expected to compare the potential cost savings against upgrade expenditures and determine the extent of control recommended at each turnout. The goal is to maintain a constant flow rate over the course of the day which meets system demands without depleting storage. Peak demands are expected to be met from existing storage volume.

The output and benefits are expected to be a cost savings from a lower capacity charge from CMWD. The capacity reservation charge in 2016 was \$715,000 based on the peak week from 2016. As an example, if the capacity reservation charge becomes 20 percent more once it is based on an instantaneous peak, the capacity reservation charge is expected to increase by \$143,000. The Ventura CMWD Plan study is expected to be completed in the Fall of 2022. This project is expected to begin the preliminary phase in 2024 and start implementation in 2025.

4. Project Code I15-510059, VEN-Pump Station Replacement and Rehabilitation Program (2024-2026) (PROPOSED PROJECT)

Q218. Please describe this program.

A218. This program is a continuation of the previously approved 2019 GRC program for the Pump Station Replacement and Rehabilitation in Ventura County District. As part of the 2019 Ventura County District CPS, California American Water completed an assessment

of the booster pump stations in the Ventura County District. The physical condition and age of pump station equipment and components can affect a pump station's reliability and associated maintenance costs. Additionally, physical conditions can create safety concerns or hazards. A desktop assessment identified the most critical pump stations, those that were either old or had known deficiencies. These critical pump stations were then selected for a more in-depth site evaluation. Of the 20 pump stations in the Ventura County District, seven were chosen for a detailed analysis. Specific needs identified at these pump stations include:

1. Pipes connecting the distribution system to the pump stations require replacement due to leaks at taps and pump connections;
2. Pump and pipe supports are corroded and require replacement;
3. Pump stations require permanent flow meters;
4. Electrical switchgear, equipment (MCC and MDS), switches, conduit, and fittings are deteriorating and require replacement;
5. Backup generators are required for reliable operation, particularly during wildfire and Santa Ana wind events where electrical utilities de-energize their power lines; and
6. Portable generators should be replaced with permanent generators as the portable ones take too long to start-up, get to remote locations, and place employees in harm's way when road closures and traffic congestion are encountered during evacuation or dangerous circumstances.

The considerable number and severity of deficiencies coupled with the age of the pump station structures and pumps makes a pump station a candidate for replacement and/or rehabilitation. California American Water recommends replacing Janss BPS, installing a generator at Las Posas BPS and developing design plans to replace Fordham BPS. This project and these recommendations were identified in the 2019 Ventura County CPS.

1 **5. Project Code I15-510060, VEN-SCADA Maintenance and**
2 **Improvements Program (2024-2026) (PROPOSED PROJECT)**

3 Q219. Please describe.

4 A219. This proposed investment program is an investment project for improving the SCADA
5 system data collection within the Ventura District. The upgrades are expected to allow
6 California American Water to better monitor the district for equipment shutdowns,
7 maintain 24-7 service to customers, and provide accurate data collection.

8
9 California-American Water completed a Ventura SCADA Master Plan study that identified
10 updating data collection for site locations including turnouts, tanks, and booster pump
11 stations. The Master plan also listed SCADA related components at sites including flow
12 meters, pressure transducers, SCADA cabinets, batteries, UPS, antennae, fans, and cellular
13 radios. The listed SCADA assets have a typical lifespan and need to be replaced on a
14 regular basis. This program is expected to replace components that are at the end of the
15 useful life for those components. Many locations require updated data collection,
16 transmitters, SCADA system connections and automated operation upgrades to integrate
17 fully into the existing SCADA system.

18
19 An upgraded SCADA system for data collection is expected to improve system reliability,
20 quality of service and improve water conservation measures.

21
22 **6. Project Code I15-510061, VEN-Tank Rehabilitation and Seismic**
23 **Upgrades Program (2024-2026) (PROPOSED PROJECT)**

24 Q220. Please describe.

25 A220. This proposed investment program is for tank rehabilitation and seismic upgrades within
26 the Ventura District beginning in 2024 and going through 2026. California American
27 Water follows the AWWA recommended inspection of storage tanks every three to five
28 years and recent tank inspections have resulted in rehabilitation and seismic upgrade

1 recommendations. The Ventura District has twenty steel and concrete storage tanks
2 throughout the service area that were constructed at various times that require ongoing
3 maintenance.

4
5 The 2019 Ventura County District CPS estimated the seismic upgrades that are expected to
6 be needed and recommended completion of a tank seismic study. Recommendations from
7 the seismic assessments are expected to be completed in 2022. The results of the study are
8 expected to be a prioritized list of recommendations to seismically harden each tank. The
9 recommended tank rehabilitation and seismic improvements are expected to be included in
10 this program.

11
12 **7. Project Code I15-510062, VEN-Standby Generator Improvements**
13 **Program (2024-2026) (PROPOSED PROJECT)**

14 Q221. Please describe.

15 A221. This investment program is expected to install standby generators at critical sites in the
16 Ventura County District. The Emergency Power Study is being completed in early 2022
17 and California American Water is expected to prioritize generator installation from the list
18 of recommendations from the report.

19
20 California American Water's policies require at least 100% of ADD to be provided during
21 a utility power outage in its systems. California American Water uses standby generators to
22 provide this emergency backup power to primary water facilities. Currently, only nine
23 operating generators are used to provide emergency power to wells and booster stations in
24 the Ventura County District which has over 40 sites. This project is designed to meet
25 California American Water's standard in all systems, while meeting air quality regulations
26 on the use of diesel-fueled generators. This project was identified in the 2019 Ventura
27 County CPS and 2022 Emergency Power Study.

E. Central Division Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

Central Division Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-400130	MRY-Carmel Woods #1 and #2 Tank Replacement	2023-2025	\$1,528,563	\$216,628	\$1,311,935	\$0
I15-400142	MRY-Ralph Lane Interconnect	2025-2025	\$350,448	\$0	\$350,448	\$0
I15-400153	MRY-Eardley-Forest Lake Transmission Main Replacement	2024-2027	\$436,302	\$108,314	\$109,328	\$218,660
I15-400154	MRY-BIRP Sound wall	2024-2025	\$326,970	\$108,314	\$218,656	\$0
I15-400155	MRY-Carmel Valley Transmission Main Improvement	2024-2029	\$817,425	\$270,785	\$273,320	\$273,320
I15-400156	MRY-Los Padres Dam Facilities Improvements	Annual	\$326,970	\$108,314	\$109,328	\$109,328
I15-400157	MRY-Main Replacement Program (2024-2026)	Annual	\$15,209,753	\$4,432,205	\$5,083,748	\$5,693,800
I15-400158	MRY-Fire Protection Program (2024-2026)	Annual	\$1,177,092	\$389,930	\$393,581	\$393,581
I15-400159	MRY-Pump Station Rehabilitation Program (2024-2026)	Annual	\$3,008,122	\$996,488	\$1,005,817	\$1,005,817
I15-400160	MRY-SCADA Maintenance and Improvements Program (2024-2026)	Annual	\$1,713,419	\$567,083	\$573,168	\$573,168

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-400161	MRY-Tank Rehabilitation Program (2024-2026)	Annual	\$4,904,547	\$1,624,709	\$1,639,919	\$1,639,919
I15-400162	MRY-Well Rehabilitation Program (2024-2026)	Annual	\$5,446,116	\$2,166,278	\$1,639,919	\$1,639,919
I15-400163	MRY-Standby Generator Improvement Program (2024-2026)	Annual	\$1,226,137	\$406,177	\$409,980	\$409,980
I15-400164	MRY-Well Installation and Replacement Program (2024-2026)	Annual	\$4,577,577	\$1,516,395	\$1,530,591	\$1,530,591
I15-400165	MRY-Tank Installation and Replacement Program (2024-2026)	Annual	\$4,577,577	\$1,516,395	\$1,530,591	\$1,530,591
	Total		\$45,627,018	\$14,428,015	\$16,180,329	\$15,018,674

MRY - Monterey Water

**1. Project Code I15-400130, Carmel Woods #1 and #2 Tank Replacement
(PROPOSED PROJECT)**

Q222. Please describe.

A222. The Carmel Woods Tanks #1 and #2 are each 50,000-gallon concrete storage tanks located adjacent to the City of Carmel within the Monterey water system. The tanks are leaking and have reached the end of their useful life. In 2007, California American Water hired TIC to perform an inspection of these tanks. TIC recommended that the tanks be replaced due to their age and condition.

There are currently three existing tanks and a pump station on the site. One of the three tanks is a welded steel tank built in 2012 that replaced an older steel tank. The two older

tanks, Carmel Woods #1 and #2, are concrete tanks showing signs of leaking and deterioration. The Carmel Woods pump station is located in a concrete structure that is located in a small concrete building between the two existing concrete tanks. This combined concrete structure (the two existing tanks and the pump station) retains a slope adjacent to a roadway. The deteriorating concrete tanks and pump station are expected to be removed, and a new pump station is expected to be built on site. This station is being built under the Booster Station Program project I15-400127. Once the new pump station is in service, the existing pump station and the two existing concrete tanks can be demolished. This is expected to allow room for a new replacement tank. The site may not have room for a conventional retaining wall footing adjacent to the new tank and an alternative retaining wall footing may be necessary. The project is expected to also require upsizing the overflow drain line to address current site drainage issues. To date, the pump station electrical service panel that sits directly behind the tank has been relocated under the Booster Station Program project I15-400127.

This project is expected to provide California American Water with improved system reliability and maintenance access. It is expected to also improve the drainage issues at the existing site and reduce California American Water's reliance on the aging concrete tanks.

The tanks are scheduled to be installed in 2022-2023; however, the budget is being requested in this new rate case as there is no approved budget in the 2021-2023 GRC.

2. Project Code I15-400142, Ralph Lane Interconnect (PROPOSED PROJECT)

Q223. Please describe.

A223. This project consists of installing a new 8-inch interconnection between the California American Water system and the neighboring water system. This project would provide a permanent standby connection so that Ralph Lane could be fed from the neighboring water

1 system in the event of a supply disruption. The Ralph Lane system is currently supplied by
2 a single well and has one 50,000-gallon storage tank. If the well is out of service due to
3 mechanical issues or water quality concerns, the full tank would only be able to provide
4 water to the system for three to four days. If a fire occurred during the time the well is out
5 of service, the available storage would be reduced much more quickly. Providing a
6 secondary source of supply to this system would increase the reliability of supply and
7 would allow the system to continue to meet customer demands and firefighting needs if the
8 well is out of service. In the past, while the Ralph Lane well was out of service, a
9 temporary interconnection of above ground piping was used to feed the Ralph Lane system
10 from the adjacent water system. This project would establish permanent infrastructure that
11 could be activated quickly and safely to supply Ralph Lane if the existing well is out of
12 service for maintenance or due to emergencies.

13
14 **3. Project Code I15-400153, Eardley-Forest Lake Above Ground**
15 **Transmission Main Replacement (PROPOSED PROJECT)**

16 Q224. Please describe.

17 A224. The replacement of the Eardley to Forest Lake transmission main was initially identified in
18 the 2019 Monterey County CPS. This project is to replace approximately 13,000 linear feet
19 of 30-inch transmission main. Approximately 1,000 linear feet of the main are above
20 ground and exposed in areas not easily accessible, and this section has experienced leaks
21 and damage resulting in lengthy and costly repairs, which makes this section a high priority
22 to replace. The proposed project would include the preliminary effort to assess, prepare
23 environmental permitting, right of way acquisition, and design a feasible option to replace
24 the exposed section of this pipeline. Based on the efforts in this phase, the project is
25 expected to then be evaluated for the construction phase.

26
27 **4. Project Code I15-400154, BIRP Sound Walls (PROPOSED PROJECT)**

28 Q225. Please describe.

1 A225. This project is expected to provide sound attenuation at the Begonia Iron Removal Plant
2 (“BIRP”) site for the surrounding residential properties. BIRP is located in mid-Carmel
3 Valley and is surrounded by residential properties on the south and west, commercial
4 properties on the north, and a mix of residential and commercial properties to the east. The
5 BIRP facility operates year-round and has many processes that generate noise including
6 heavy equipment that is used for maintenance of the ponds, air compressors that are used
7 for unloading chemicals, and an air treatment system used for water treatment. The east
8 side of the property has a 12-foot sound wall but there is no sound attenuation on the west
9 side of the property. Several of the neighbors complained this past year of excessive noise
10 from the maintenance operations at the facility. Noise levels were measured on the private
11 property side of the facility and at times were more than 85 decibels. This proposed project
12 is expected to construct a 12-foot sound wall on the west side of the property to match the
13 wall on the east side. The requested funding for this project is expected to cover the
14 permitting, design, and construction of this sound wall.

15
16 **5. Project Code I15-400155, Carmel Valley Transmission Main**
17 **Improvements (PROPOSED PROJECT)**

18 Q226. Please describe.

19 A226. This project was initially identified in the 2019 Monterey County CPS. There is
20 approximately 10,000 linear feet of 22-inch riveted steel main that runs diagonally under
21 several private properties parallel to Carmel Valley Road from Valley Greens Drive to the
22 Begonia Iron Removal Plant. This riveted steel main is over 100 years old, logistically
23 inaccessible and therefore unmaintained, and in an unknown condition. A riveted steel
24 main that cannot be maintained poses a major water loss potential, a safety risk to
25 homeowners and a financial risk to the Company. Because the main runs under properties
26 and homes, a major water line break could result in injuries and/or severe property damage.
27 Consequently, California American Water plans to install new mains and service lines and
28 connect them to the 30-inch transmission line on Carmel Valley Road. The proposed

1 project is for preliminary design for these new mains and service lines. This initial phase is
2 expected to be substantial due to the extensive efforts to coordinate service connections,
3 acquire easements and rights-of-way, obtain environmental permits, and design the new
4 mains, service lines, and connections.

5
6 **6. Project Code I15-400156, Los Padres Dam Facilities Improvements**
7 **(PROPOSED PROJECT)**

8 Q227. Please describe.

9 A227. California American Water owns and operates LPD along the Carmel River. The LPD was
10 built in 1949 and is designed with mechanical valves to safely operate the dam. In 2015,
11 California American Water hired a consultant to perform a mechanical assessment of the
12 dam's valves. The assessment was based on documents obtained from California
13 American Water and the DSOD and a site inspection held on November 20, 2015, with
14 DSOD, as well as interviews with California American Water personnel. The assessment
15 identifies recommendations for improvements. These improvements include replacing
16 various valves that control the dam's operation. To safely operate the dam and minimize
17 risk to the dam's operation, these improvements are being implemented starting with the
18 highest priority recommendations. Highest priority valves are being replaced under the
19 I15-400109 project in 2021-2023. Remaining valve replacements are expected to be
20 performed under this project.

21
22 **7. Project Code I15-400157, Main Replacement Program (2024-2026)**
23 **(PROPOSED PROJECT)**

24 Q228. Please describe this program.

25 A228. This program is a continuation of the previously approved Main Replacement Program
26 Project I15-400125 and it was recommended in the 2019 CPS. The Central Division has
27 approximately 630 miles of water main in its distribution system. A large percentage of this
28 pipe is nearing the end of its expected useful life. Much of this pipe has a smaller diameter

than current standards and therefore impedes the ability of the system to deliver adequate fire flow; this pipe is also experiencing a higher rate of breaks and leaks, leading to water loss and disruption to customers. In 2019, California American Water completed a Buried Infrastructure CBA and a CPS that included development of a detailed hydraulic model of the distribution system. A risk score was calculated for each pipe segment based on its physical condition, leak history, and hydraulic constraints (such as the ability to deliver recommended fire flow amounts). Based on these risk scores, a number of main replacement projects were recommended for inclusion in this program. The CBA identified 22 miles of main for replacement, as well as 10,500 feet for abandonment and 24,000 feet for lining to mitigate water age issues. This capital IP consists of a series of planned main replacement activities to maintain the performance and reliability of the Central Division distribution system as well as unplanned main replacements that are coordinated with City pavement rehabilitation projects along various streets. The proposed funding for 2024-2026 is intended to address portions of the highest priority areas identified in the CBA. It is recommended that the Central Division continue to perform annual renewal to address distribution system deficiencies throughout the service area. The funding should be based upon current priorities and on-going main replacement efforts.

8. Project Code I15-400158, Fire Protection Program (2024-2026)
(PROPOSED PROJECT)

Q229. Please describe this program.

A229. This program is a continuation of the previously approved Fire Protection Program I15-400126. In 2019, California American Water completed a CPS that included development of a detailed hydraulic model of the distribution system. The model was used to evaluate available fire flow and storage volume throughout the system. There are several pressure zones in the Central Division that do not have the pumping capacity and/or storage capacity to provide the recommended fire flow. The Central Division seeks to implement upgrades to increase the system's ability to deliver water for firefighting. California American Water

has historically worked with a Fire Flow Task Force consisting of representatives from the fire protection agencies that serve the area. This Task Force reviews the recommended improvements and helps prioritize the projects to be implemented each year.

California American Water plans to continue to work with a task force of representatives from local fire protection agencies to prioritize and coordinate improvement projects to increase the system's ability to provide fire flow. Upgrading the booster pumps and/or storage tanks is expected to provide improved system reliability for satisfying peak demands and fire flows. This is expected to help to make available higher available fire protection during maximum demand periods. Preliminary cost estimates for the various recommended improvements are based upon construction of similar projects in Monterey, but these estimates are expected to require additional development for the specific site conditions.

9. Project Code I15-400159, Pump Station Rehabilitation Program (2024-2026) (PROPOSED PROJECT)

Q230. Please describe this program.

A230. This proposed project is expected to allow California American Water to continue to maintain its BPSs within the Central Division. The Central Division has 145 booster pumps that compose 70 booster stations. Ongoing rehabilitation is required to ensure that the booster stations remain reliable and avoid costly failures. Many of the pumps and some of the stations have reached or are nearing the end of their useful life. The stations range in age from eight to 92 years old, and the average age of the stations is roughly 52 years. To evaluate the needs of the project, California American Water prepared the 2019 BPS CBA as part of the CPS effort. The goal of the CPS (and corresponding CBAs on infrastructure and booster stations) was to identify and prioritize capital improvement projects necessary to ensure the Central Division can safely, adequately, and reliably distribute water to meet current and projected water demands. The booster station CBA included a detailed

analysis of 14 pumping stations and evaluated various components such as: site conditions, structural conditions, process equipment, piping and valves, heating and ventilation systems, instrumentation and control systems, electrical systems, standby power, and fire and safety. The remaining stations were evaluated through a desktop assessment that evaluated pump and pump station service-life, pump efficiency, hydraulic capacity, and power outage reliability.

The selection of booster stations for this project is expected to be prioritized during the course of the project. The sequence of implementation of these sites is expected to be evaluated and made based on schedule requirements and subject to easement considerations and/or relocations.

Annual costs for station replacements have increased due to schedule delays for electrical service applications, increased electrical requirements as experienced in recent upgrades, and sound attenuation considerations.

This project was identified in the 2019 Monterey County CPS, specifically in the BPS CBA.

**10. Project Code I15-400160, SCADA Maintenance and Improvements
Program (2024-2026) (PROPOSED PROJECT)**

Q231. Please describe this program.

A231. This program is a continuation of the previously approved SCADA Maintenance and Improvement Program I15-400096 for ongoing replacement of SCADA equipment within the Central Division.

These upgrades allow California American Water to better monitor the distribution system for potential water loss, excessive energy use, and low system pressures. Upgrades also

allow California American Water to identify potential concerns, such as low tank levels, and allow for adjustments to be made quickly and remotely without requiring operators to visit remote sites. These upgrades also result in reduced exposure for staff.

An upgraded SCADA system is expected to improve system reliability and quality of service, reduce the risk of service disruptions, replace obsolete systems that have reached the end of their useful lives, and improve operational efficiency. This project is expected to upgrade the Monterey Booster and tank site's motor control sensors, control cabinets, chemical delivery system, and instrumentation. Instrumentation upgrades are expected to be implemented throughout the Monterey Main system.

11. Project Code I15-400161, Tank Rehabilitation Program (2024-2026) (PROPOSED PROJECT)

Q232. Please describe this program.

A232. This program is a continuation of the previously approved Tank Rehabilitation Program I15-400129. Storage tanks in the Central Division require maintenance to remain in proper working condition and ensure safe and reliable service to California American Water customers. A consulting firm has performed inspections on these tanks and has provided a schedule for upgrades and painting. Since 2017 there has been renewed focus on tank inspections and as a result all tanks have been inspected within the last five years. By the end of 2022, all tanks listed in the 2019 CPS are expected to have been rehabilitated.

Recent tank rehabilitation projects include Pebble Beach #2, Presidio #1, and Carola Tank #1, which were completed in 2020. Hilby Tank #1 and #2, and Ranchitos #1 were completed in 2021. Upper Airways and Fairways Tanks #1, #2, and #3 are scheduled to be completed in 2022.

1 With the renewed focus on tank inspections, the consultant recently inspected tanks that
2 had not been inspected since 2007. The inspection reports specified several additional tanks
3 requiring rehabilitation. Tanks that are proposed for the 2024-2026 rehabilitation program
4 are Forest Lake Tank #1, which is scheduled in 2024, Aguajito #2, Upper Middle Canyon,
5 and Ord Grove scheduled in 2025, as well as Country Club Heights, and Rio Vista Tanks
6 #1, #2, and #3, which are scheduled in 2026.

7
8 The Monterey Division has approximately 100 storage tanks that provide storage and
9 supply of water to customers. These storage facilities are critical for supplying water
10 during peak demand periods and for fire protection. Ongoing rehabilitation is required to
11 ensure that the storage facilities remain reliable and costly failures can be avoided. Some of
12 the issues that occur as the tanks age include corrosion or surface damage of the tank
13 surface or the connecting piping. Additionally, required upgrades to inspection access
14 hatches allow for continued monitoring and assessment. It is recommended that the
15 Central Division perform tank upgrades, painting, and maintenance in accordance with the
16 schedule from the consultant and that California American Water continue to perform
17 seismic upgrades at critical storage tanks in coordination with rehabilitation projects that
18 are identified based on age and current condition.

19
20 This project was identified in the 2019 Monterey County CPS.

21
22 **12. Project Code I15-400162, Well Rehabilitation Program (2024-2026)**
23 **(PROPOSED PROJECT)**

24 Q233. Please describe this program.

25 A233. This program is a continuation of the previously approved Well Rehabilitation Program
26 I15-400131. This proposed investment project consists of planned well rehabilitation to
27 maintain the performance and reliability of the Monterey System source of supply wells.
28 The wells throughout the Central Division require ongoing maintenance, rehabilitation, and

1 replacement (at existing or new locations as required) of above and below ground facilities
2 to continue to provide safe and reliable service to customers. California American Water
3 completed a CPS for the Central Division in 2019. The CPS included an evaluation of
4 current and projected future demands, as well as an evaluation of available supplies.

5
6 Many wells on the Carmel River are experiencing a decline in capacity due to the
7 prevalence of iron bacteria among other contaminants, which reduces the flow through the
8 surrounding aquifer. The well rehabilitation strategy removes contaminants and improves
9 the production capacity and increases the serviceable life of the well. This program is
10 expected to allow for three well rehabilitations per year, thus extending the life of the asset
11 and avoiding costly replacement. California American Water has evaluated the condition of
12 its well field and has prioritized the wells which are declining in production capacity.
13 Pearce Well, Begonia Well #2, and Berwick Well #9. have been identified as candidates for
14 rehabilitation in 2024.

15
16 This program is intended to maintain the performance and reliability of the Monterey
17 System wells and sources of supply. Well rehabilitation is expected to also increase
18 California American Water's ability to pump groundwater from the Carmel River basin to
19 maximize water rights, including the ASR Program when river flows permit.

20
21 **13. Project Code I15-400163, Standby Generator Improvement Program**
22 **(2024-2026) (PROPOSED PROJECT)**

23 Q234. Please describe this program.

24 A234. This program is a continuation of the previously approved Standby Generator Improvement
25 Program (I15-400140). The service goals of California American Water include the ability
26 to supply average day demands at all times. The Central Division has approximately 70
27 BPSs, some of which pump into zones with only a hydropneumatic tank or with no storage
28 tank at all. These zones would lose water pressure almost immediately upon the loss of

power to the pump station. Additionally, the Central Division has a number of wells and treatment facilities that are critical to the adequate supply of water to customers. This program includes the installation of new permanent generators as well as the installation of connection points to allow California American Water staff to connect temporary portable generators during a power outage. Generators are expected to provide backup power which is expected to allow California American Water to deliver water and maintain pressure in the distribution system, protecting public health. California American Water is expected to continue to prioritize generator installation at the sites listed in the CPS and in the Emergency Power Study being completed in 2022.

**14. Project Code I15-400164, Well Installation and Replacement Program
(2024-2026) (PROPOSED PROJECT)**

Q235. Please describe this program.

A235. This program is expected to allow the Central Division to maintain water production targets for the Carmel Valley Well field and the Seaside Basin wells as well as other critical production wells within the Central Division. It is critical to be able to maintain production targets for both the Seaside basin and the Carmel Valley Well Field due to seasonal and regulatory constraints on pumping. A key element of our water supply portfolio is maximizing the Aquifer Storage and Recovery program which utilizes excess flow from the Carmel River in the winter and stores this water in the Seaside Basin. Although well replacement projects have been performed in the past, this is the first iteration of the Well Installation and Replacement Program. California American Water completed a CPS for the Central Division in 2019. The CPS included an evaluation of current and projected future demands, as well as an evaluation of available supplies.

This proposed investment project is intended to support replacements and new well installation projects. Many wells on the Carmel River are nearing the end of their useful life and will need to be replaced over the next several years. A previously completed Well

Field Optimization Study, and subsequent recommendations included under project I15-400106, identified wells that need to be replaced. Wells that have declined in capacity and are reaching the end of their useful life are Pearce Well, Cypress Well and Rancho Canada Well #2. The proposed budget covers approximately one well replacement per year.

**15. Project Code I15-400165, Tank Installation and Replacement Program
(2024-2026) (PROPOSED PROJECT)**

Q236. Please describe this program.

A236. Although tank replacement projects have been performed in the past, this is the first iteration of the Tank Installation and Replacement Program. Storage tanks in the Monterey System require maintenance in order to remain in proper working condition to meet safety/structural requirements and ensure safe and reliable service to customers. The most recent inspections were performed in 2022. The results of these inspections provide the basis and schedule for upgrades and painting along with planning costs for the repairs.

California American Water's Monterey System is composed of approximately 100 active potable water storage tank facilities that serve as storage in order to provide adequate supply of water to the customers. Storage facilities are critical for supplying water during peak demand periods, for fire protection and for redundancy in short-term cases where sources of supply are not operational. The act of ongoing rehabilitation is required to ensure that storage facilities remain reliable, costly failures can be avoided, and OSHA/ANSI safety requirements are met. Inspections were performed on these tanks.

Examples of some of the tank rehabilitation upgrades required include those to address compromised structural integrity, freeboard deficiency, undersized manways, ladder deficiencies, roof manhole seal deficiencies, overflow additions and overflow airgaps and to identify when the next coating will be required. When these tanks have reached the point at which rehabilitation can no longer restore the tank, for example when the metal thickness

has deteriorated, or if seismic inspections expose a significant seismic deficiency, these tanks must be replaced.

Several tanks have been identified by TIC inspection reports as requiring replacement. For the 2024-2026 rates case, the tanks that have been identified for replacement are Boyd Tank, Carola #1 Tank, and Upper Paseo Privado Tank.

F. Sacramento District Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

Sacramento County Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-600106	SAC-Isleton Storage Tank	2024-2025	\$1,856,547	\$216,628	\$1,639,919	\$0
I15-600108	SAC-Wittkop 2 Water Treatment Plant	2024-2025	\$4,356,876	\$216,628	\$4,140,248	\$0
I15-600109	SAC-Vintage 1 Treatment	2024-2025	\$2,825,779	\$270,785	\$2,554,994	\$0
I15-600110	SAC-Malaga Well Replacement and TCP Treatment	2022-2024	\$649,883	\$649,883	\$0	\$0
I15-600111	NOR-Main Replacement Program (2024-2026)	Annual	\$16,348,488	\$5,415,696	\$5,466,396	\$5,466,396
I15-600112	NOR-SCADA Maintenance and Improvements Program (2024-2026)	Annual	\$2,763,211	\$661,597	\$1,050,807	\$1,050,807
I15-600113	NOR-Well Installation and Replacement Program (2024-2026)	Annual	\$44,296,619	\$13,972,495	\$14,813,934	\$15,510,190

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-600114	NOR-Well Rehabilitation Program (2024-2026)	Annual	\$9,155,154	\$3,032,270	\$3,061,182	\$3,061,182
I15-600115	NOR-Standby Generator Improvement Program (2024-2026)	Annual	\$3,923,637	\$1,299,767	\$1,311,935	\$1,311,935
I15-600116	SAC-Service Saddle Replacement Program (2024-2026)	Annual	\$6,543,452	\$1,733,023	\$2,405,214	\$2,405,214
I15-660004	FRV-South Highway 99 Crossing	2024-2025	\$1,145,408	\$270,785	\$874,623	\$0
I15-660005	FRV-Well Rehabilitation Program (2024-2026)	Annual	\$1,634,850	\$541,570	\$546,640	\$546,640
I15-660006	FRV-Well Replacement and Installation Program (2024-2026)	Annual	\$8,076,071	\$1,516,395	\$3,279,838	\$3,279,838
I15-670004	HILL-Hillview Tank Rehab Program (2024-2026)	Annual	\$1,677,354	\$555,650	\$560,852	\$560,852
I15-670005	HILL-Hillview Tank Replacement Program (2024-2026)	2024-2026	\$3,897,479	\$1,291,101	\$1,303,189	\$1,303,189
I15-670006	HILL-Hillview Pump Station Rehabilitation Program (2024-2026)	2025-2026	\$1,093,280	\$0	\$546,640	\$546,640

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-670007	HILL-Oakhurst 420 Site Bypass	2026-2028	\$51,480	\$0	\$0	\$51,480
I15-670008	HILL-Oakhurst Junction Wells Site Improvements	2026-2028	\$286,000	\$0	\$0	\$286,000
I15-670009	HILL-PSPS WTP Power Storage Project	2022-2023	\$0	\$0	\$0	\$0
I15-860001	BASS-Bass Lake Flat Rate to Metered Conversion	2023-2024	\$5,496,931	\$5,496,931	\$0	\$0
	Total		\$116,078,499	\$37,141,724	\$43,556,411	\$35,380,363

SAC - Sacramento
NOR - Northern Division
FRV - Fruitridge Vista
HILL - Hillview
BASS - Bass Lake

1. Project Code I15-600106, Isleton Tank (PROPOSED PROJECT)

Q237. Please describe.

A237. DDW has determined that the Isleton Water System, including the Oxbow service area, does not conform to the storage requirements as delineated in §64554 (a)(2) Article 2, Chapter 16 (California Water Works Standards), Division 4 of Title 22 California Code of Regulations. The available storage, approximately 300,000 gallons, is not greater than or equal to the MDD of 450,000 gallons (2011). DDW has requested a schedule for compliance with the storage requirements of §64554. A structural and seismic assessment of the elevated storage tank was performed by NCS Engineers and is summarized in the following report: Isleton Elevated Steel Water Storage Tank Assessment Report, June 2019. As part of this assessment, the slosh or freeboard requirement was determined to be

9 feet, not the 4-inches currently provided, thus the usable capacity in the storage tank would be reduced by 30,500 gallons to less than 60,000 gallons. The most significant item related to the seismic stability of the storage tank is that the foundation is inadequate to prevent overturning of the structure during a seismic event as determined by AWWA D-100/ASCE 7-10 (California Building Code). The Isleton system has a new 200,000-gallon bolted steel storage tank and booster pump station that was constructed and placed in service in 2018. This storage is supplemented by the water stored in the elevated storage tank that was constructed in 1991 and inspected and evaluated in 2019. This additional storage should be reduced to approximately 60,000 gallons if the elevated tank is to be structurally modified as outlined in the evaluation. However, structural modifications to include a deep foundation similar to the one constructed for the new bolted steel storage tank will be very expensive, on cost per gallon basis, in comparison to a new bolted steel tank. In addition, retrofitting of the existing elevated steel storage tank will not provide the required additional storage. Construction of an additional 250,000-gallon bolted steel Storage Tank is recommended as the most cost-effective method of achieving the additional storage required. This tank can be constructed adjacent to the existing storage tank, as the storage tank and booster pump station site layout were configured for the addition of another similar sized storage tank in the future. Other elements of the project include removing the elevated steel storage tank.

2. Project Code I15-600108, Wittkop 2 Water Treatment Plant (PROPOSED PROJECT)

Q238. Please describe.

A238. The Wittkop 2 Well was constructed in 2021 to serve the Arden service area but only ran for the first quarter of the year before water quality results reported manganese concentrations above the secondary maximum contaminant level (“SMCL”). The manganese concentrations over the period of operation were reported between 137-170

1 ug/L, which is well over the SMCL of 50 ug/L. Wittkop 2 has been set to only run in the
2 event of emergency.

3
4 The Arden service area is only served by four existing wells and has no excess capacity to
5 meet the public water supply permit without the operation of Wittkop 2 at this time. This
6 well is critical for meeting peak demands and must be equipped with treatment to continue
7 providing safe and reliable drinking water.

8
9 The project is expected to include acquisition of a new treatment site, a pipeline connecting
10 to the new site and the associated treatment facilities. Preliminary engineering identified
11 that the well is expected to require a traditional greensand filter and backwash facilities.
12 The existing site is too small to support both the greensand filter and the associated
13 backwash system. A new pipeline is expected to need to be constructed to convey the raw
14 water produced to an offsite location with enough space to support the required facilities.
15 California American Water is currently in negotiations with San Juan School District to
16 obtain easement rights on the property to the south of the Wittkop 2 Well site to be able to
17 construct the required treatment facilities.

18
19 **3. Project Code I15-600109, Vintage 1 Treatment (PROPOSED**
20 **PROJECT)**

21 Q239. Please describe.

22 A239. The water produced at the Vintage 1 Well is experiencing elevated levels of
23 Perfluorooctanoic acid (“PFOA”) and hexavalent chromium (“hex chrome”). Both
24 containment concentrations are nearing their respective reporting limits and need to be
25 addressed before the levels rise any higher to avoid taking the well offline. Vintage 1 was
26 constructed in 1986 and is one of the largest producing wells serving the Parkway system.
27 The location is also large enough to allow for a replacement well to be installed when the
28 Vintage 1 well ages out. Given the age, capacity and size of the site, treatment of the well is

strongly recommended. Providing treatment now is expected to improve the overall water quality and reliability of the well. Additionally, PFOA and hex chrome can be treated using the same process using pressure filters equipped with contaminant-specific resin making the system resilient and cost effective.

4. Project Code I15-600110, Malaga Well Replacement and TCP Treatment (PROPOSED PROJECT)

Q240. Please describe.

A240. In 2021, California American Water settled a suit pertaining to the 1,2,3-TCP contamination of the Malaga Well. The settlement provides funding to either provide treatment for the Malaga Well or construct a new well with treatment. After reviewing both options and the conditions of the Malaga Well facilities, it was ultimately decided that a new well was the best alternative. This decision was made based on several factors. One, the Malaga Well site is too small to construct the necessary treatment facilities. Two, the Malaga Well was constructed in 1961 and is nearing the end of its useful life. And three, the Malaga Well site is too small to construct a new well and the treatment system would never be able to fully depreciate its value. The best alternative is to seek a new well site. This project is expected to construct a new well in the Suburban-Rosemont system to replace the Malaga Well and provide associated treatment if necessary.

5. Project Code I15-600111, Main Replacement Program (2024-2026) (PROPOSED PROJECT)

Q241. Please describe this program.

A241. This program is a continuation of the previously approved Main Replacement Program (I15-600097). The program allows for a planned and prioritized method for replacing mains which have been identified in the 2019 Sacramento District CPS and Buried Infrastructure CBA.

1 The CBA was developed with the intent of allowing California American Water to develop
2 prioritized and planned asset upgrade and replacement programs. For water mains, the
3 CBA asset categorization combines an assessment of likelihood of failure (based primarily
4 on physical pipe characteristics as well as the frequency of reported repairs) and
5 consequence of failure (based on factors including a criticality analysis and population
6 density) to assign an estimated priority to pipes. To proactively replace mains that have
7 been identified as having both a high likelihood of failure and high consequence of failure,
8 a programmatic annual approach is recommended as the most cost-effective solution.

9
10 In addition, areas exist where looping existing distribution mains would increase service
11 reliability, foster better water quality, and improve pressures during high demand periods.
12 Similarly, miscellaneous bottlenecks due to small pipe sizes should be relieved by
13 increasing transmission main sizes at certain points.

14
15 As part of the CPS process, hydraulic models of distribution systems were developed and
16 deficiencies throughout the district were identified. The models analyzed each system's
17 ability to provide reliable and adequate service based on flow and pressure standards and
18 forecasted customer demands. The hydraulic models of the district's service areas' pipe
19 networks were also used to evaluate potential improvement projects, including main
20 replacements. Improvement projects to the systems' mains are included in this annual main
21 improvement/replacement program for efficient implementation system wide. For example,
22 if the CBA identified a main with a high likelihood and consequence of failure in an area
23 the hydraulic model showed needed to be upsized to meet fire flow standards, a combined
24 annual main improvement/replacement program enables California American Water
25 operators to upsize the CBA-identified main instead of replacing with same-diameter pipe.

26
27 The CPS also identified backyard mains to be replaced with properly sized distribution
28 mains located within the public rights-of-way. Several service areas within the Sacramento

District still contain residential areas where water mains were installed in backyards, making maintenance and repair extremely difficult, costly, and invasive to homeowner privacy.

6. Project Code I15-600112, SCADA Maintenance and Improvements Program (2024-2026) (PROPOSED PROJECT)

Q242. Please describe this program.

A242. This program is a continuation of the previously approved SCADA Maintenance and Improvements Program (I15-600100). A significant investment in SCADA equipment has been made to provide better monitoring and control of California American Water facilities throughout the Northern District. To maintain this system, continued updates to SCADA systems and equipment must be performed.

California American Water developed the 2019 Northern Division SCADA Master Plan to assess the existing SCADA systems and consider alternatives based on current technologies and business requirements to define and plan for implementation of SCADA system improvements. The goals of the Master Plan were to establish a clear vision and governance of the SCADA system, provide reliable communication to all sites, make the SCADA system a priority source for system data, establish a PLC replacement/upgrade program, and to reduce dependence on sole source providers. Through following the Master Plan, California American Water has begun to make a significant, continued investment in SCADA throughout the Northern District understanding that much of this equipment has a finite life and requires ongoing maintenance and replacement.

SCADA can provide remote operation as well as real-time recording of well water levels, flow rate, residual chlorine, and pressure. This information is necessary to make decisions on operations, maintenance, and supply adequacy. It also allows California American Water to maintain and enhance water system reliability. A comprehensive and well-

maintained SCADA system allows for more effective system control, monitoring, record keeping, and system diagnosis. California American Water should continue to maintain and replace SCADA components as needed to sustain existing SCADA infrastructure via an annual investment.

7. Project Code I15-600113, Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT)

Q243. Please describe this program.

A243. This program is a continuation of the previously approved Well Installation and Replacement Program (I15-600098). The ability to reliably provide safe, clean water in adequate quantities to address system needs is the highest priority for California American Water. Groundwater is by far the largest source of supply for water in the Northern District with 137 groundwater wells; therefore, replacement of wells near the end of their structural and hydraulic lives is essential to avoiding failure of wells at critical times.

Many of the wells in the Northern District, by virtue of age and changes in regulations, do not meet current construction standards of the DDW that were adopted with the intent of protecting groundwater quality. Wells constructed by the cable tool method do not have a sanitary seal thus they can be subject to surface contamination and inter-aquifer transfer of contaminants as there is no way to isolate the various aquifer zones. Replacing these facilities when they are near the end of their economic lives with new gravel packed wells with sanitary seals and intermediate seals is expected to allow California American Water to address current and future water quantity and quality issues in a cost-effective manner in term of cost per unit of capacity.

Many of the existing wells in the Northern Districts are nearing or have already exceeded their 60-year service lives and overall system capacity has been decreasing over time. Aging wells have lower specific capacities and an associated decline in well production and

1 increase in operational costs, often in combination with water quality issues. These wells
2 require frequent rehabilitation or the addition of treatment facilities to maintain their
3 capacities. Many of these wells are inactive or are producing at significantly lower
4 capacities than originally designed.

5
6 In addition to replacing aging wells, new well installation and/or replacement is needed
7 throughout the Northern Districts to continue to meet current demands and projected
8 increases in demands. New wells increase system capacity and allow California American
9 Water to continue to meet future demands.

10
11 Water quality issues have rendered some wells to be inactive or operating at lower
12 capacities. To minimize maintenance/treatment costs and maintain system capacity,
13 California American Water operators have identified wells with water quality issues that
14 may need to be replaced with a new well in a different site or a well on the existing site that
15 is constructed to address water quality by being selective with regard to the formations
16 being developed.

17
18 New well construction methods result in higher capacities at individual wells and allow
19 more effective, less frequent rehabilitation. By decreasing the overall number of wells in
20 the system while maintaining or increasing system capacity, California American Water
21 can limit maintenance costs. When wells with water quality issues are properly abandoned,
22 these actions should help prevent the need for additional maintenance and monitoring costs.

23
24 To determine whether an individual well should be abandoned or replaced under this
25 program, the 2021 Well Replacement Plan was published to develop a risk-based
26 evaluation of existing wells and present a schedule for future well replacements. The plan
27 identified a minimum replacement rate of four wells a year over the next 20 years for
28 California American Water to maintain service to the Northern Districts.

This project was identified in the 2018 Sacramento CPS.

8. Project Code I15-600114, Well Rehabilitation Program (2024-2026)
(PROPOSED PROJECT)

Q244. Please describe this program.

A244. This program is a continuation of the previously approved Well Rehabilitation Program (I15-600099). Well facilities, above- and below-ground, throughout the Northern Districts require ongoing maintenance, rehabilitation, and replacement to maintain capacity and allow California American Water to continue to provide safe and reliable water supply to customers.

The 2016 Well Rehabilitation and Sustainability Assessment Master Plan developed a well rehabilitation program for wells operated by California American Water in its Sacramento District. The goal of the program is to maintain or increase the performance and efficiency of existing well sites and repair and incorporate off-line well sites back into the associated system using financially sustainable methods. The plan prioritized and scheduled well rehabilitation improvements based on need, safety, well performance, importance, and availability. By implementing these projects, California American Water can maintain or increase the performance and efficiency of existing well sites and repair and incorporate off-line well sites back into the associated system.

Well rehabilitation projects are intended to increase system reliability, maintain system capacity, avoid catastrophic failures, minimize potential violations issued by the DDW, extend the useful life of the well facilities, improve operability, improve site safety, increase customer satisfaction, and decrease future unanticipated costs associated with rapid failure.

The plan also addressed the long-term sustainability of the well supply systems including routine maintenance, major equipment replacement, and complete well replacement. The Northern Districts now include 137 wells. Regular rehabilitation of existing wells is required to maintain well integrity and a high level of service across the seventeen districts. Rehabilitation actions range from inspection and cleaning to pump re-installation. Rehabilitation improvements can be made below-ground (pump removal, chemical treatment) and above-ground (freeze protection, hydropneumatic tank improvements).

This project was identified in the 2018 Sacramento CPS.

9. Project Code I15-600115, Standby Generator Improvements Program (2024-2026) (PROPOSED PROJECT)

Q245. Please describe this program.

A245. This program is a continuation of the previously approved Standby Generator Improvement Program (I15-6000101). The Emergency Power Study is being completed in early 2022 and California American Water is expected to prioritize from the list of recommendations from the report.

California American Water's policies require at least 100 percent of average day demand to be provided during a utility power outage in its systems. California American Water uses standby generators to provide this emergency backup power to primary water facilities. Currently, over 25 generators are used to provide emergency power to wells and treatment plants in the Sacramento District. This project is designed to meet California American Water's standard in all systems, while meeting air quality regulations on the use of diesel-fueled generators.

Provision of standby power at selected wells, pumped storage facilities, and groundwater treatment plants are expected to allow the Sacramento District systems to conform with

corporate water supply reliability criteria during utility power outages while remaining compliant with ever-increasingly stringent air emissions standards. This program helps achieve and maintain compliance by considering projected future system demands while minimizing the number of standby generators required to meet those demands during a utility outage. To ensure adequate water supply reliability and comply with air quality regulations for the Sacramento District water systems during utility outages, the existing standby generator program should continue.

This project was identified in the 2018 Sacramento CPS.

10. Project Code I15-600116, Service Saddle Replacement Program (2024-2026) (PROPOSED PROJECT)

Q246. Please describe this program.

A246. This program is a continuation of the previously approved Service Saddle Replacement Program (I15-6000102). Service saddles are used to make service line connections on water mains. The saddles are mounted on mains and are typically equipped with rubber seals or gasket to fit between the saddle and main to form a water-tight seal. This connection is held in place by a brass or stainless-steel strap that wraps around the pipe. The quality-of-service saddles is important to prevent leaks and maintain the integrity of pipe connections.

In some parts of the Antelope, Suburban-Rosemont, Lincoln Oaks, and Parkway systems, single strap stainless-steel saddles with a rubber bushing were used for service connections in the 1980s and 1990s. These single strap saddles have been experiencing frequent failures causing leaks and service line breaks. They fail because the rubber deteriorates allowing the two metal types to contact one another and start the process of galvanic corrosion. These saddles have a typical life of 20 years; however, it is impossible to accurately predict when the saddles will fail. For more than a decade, there have been clear clusters of saddle

leaks in specific regions where single strap saddles are present among four systems in the Sacramento District: Antelope, Suburban-Rosemont, Parkway, and Lincoln Oaks. Therefore, a programmatic approach to replacing these single strap saddles is proposed to address the problem more efficiently in a manner that minimizes repair work and provides for greater customer satisfaction.

This project was identified in the 2018 Sacramento CPS.

**11. Project Code I15-660004, Fruitridge Vista -South Highway 99 Crossing
(PROPOSED PROJECT)**

Q247. Please describe.

A247. The Fruitridge Vista system is split by Highway 99 and relies on pipeline crossings at three locations. The southern-most crossing located just north of Florin Road was found to be in poor condition where it connected to BoWelling Green neighborhood on the west side of the highway. The pipe is believed to be a 60-year-old 8-inch asbestos cement pipe. This crossing provides a critical connection to the customers in the southwest corner of the service area and failure would impact water supply and impact potentially a major transportation corridor.

Installation would require boring a new water main under the highway. The first phase of the project would be an evaluation of a suitable location for the new crossing as the existing location is in the backyards of existing residences.

Replacement of this crossing is expected to provide long-term reliability of the system.

**12. Project Code I15-660005, Fruitridge Vista Well Rehabilitation Program
(2024-2026) (PROPOSED PROJECT)**

Q248. Please describe this program.

A248. This program is a continuation of the Fruitridge Vista Well Rehabilitation Program (I15-660003). Well facilities, above- and below-ground, throughout the Fruitridge Vista System require ongoing maintenance, rehabilitation, and replacement to maintain capacity and allow California American Water to continue to provide safe and reliable water supply to customers. By implementing well rehabilitation projects, California American Water can maintain or increase the performance and efficiency of existing well sites and repair and incorporate off-line well sites back into the associated system.

13. Project Code I15-660006, Fruitridge Vista Well Installation and Replacement Program (2024-2026) (PROPOSED PROJECT)

Q249. Please describe this program.

A249. Well replacement is needed throughout the Fruitridge Vista Water System (“FVWS”) to continue to meet current demands and projected increases in demand. Replacement wells are expected to allow abandonment of aging wells, minimizing maintenance costs.

Many of the existing wells in the FVWS are nearing or have already exceeded the expected 60-year service life (based on well data for the entire California American Water Northern Division) and overall system capacity has been decreasing over time per the 2022 Northern Division Well Replacement Plan (“Well Replacement Plan”) (Brown and Caldwell, 2022). Aging wells have lower specific capacities and an associated decline in well production and increase in operational costs, often in combination with water quality issues. These wells require frequent rehabilitation or the addition of treatment facilities to maintain their capacities. Many of these wells are producing at significantly lower capacities than originally designed. New well construction methods result in higher capacities at individual wells and allow more effective, less frequent rehabilitation.

To determine whether an individual well should be abandoned or replaced under this program, the 2021 Well Replacement Plan was published to develop a risk-based

evaluation of existing wells and present a schedule for future well replacements. The plan recommended two wells be replaced in the FVWS in the 2024 to 2026 rate case.

This project was identified in the 2022 Fruitridge Vista Water System CPS.

14. Project Code I15-670004, Hillview Area Tank Rehab Program (2024-2026) (PROPOSED PROJECT)

Q250. Please describe this program.

A250. Storage tanks require maintenance to remain in proper working condition, meet safety/structural requirements, and ensure safe and reliable service to customers.

Inspections were performed for tanks in the Hillview area in late 2021. The results of these inspections are a schedule for upgrades and painting along with planning costs for the repairs.

California American Water's Hillview area systems have 21 active potable water tanks that serve as storage to provide adequate supply of water to customers. In addition, there are at least six tanks that are utilized at the three water treatment plants – Forest Ridge WTP, Sierra Lakes WTP, and Raymond WTP. Storage facilities are critical for supplying water during peak demand periods, for fire protection, and for redundancy in short-term cases where sources of supply are not operational. The act of ongoing rehabilitation is required to ensure that storage facilities remain reliable, costly failures can be avoided, and OSHA/ANSI safety requirements are met. Inspections were performed on these tanks.

Examples of some of the tank rehabilitation upgrades required include those to address compromised structural integrity, freeboard deficiency, undersized manways, ladder deficiencies, roof manhole seal deficiencies, overflow additions and overflow airgaps as well as identifying when the next coating will be required.

This project was identified in the 2022 Hillview CPS.

**15. Project Code I15-670005, Hillview Area Tank Replacement Program
(2024-2026) (PROPOSED PROJECT)**

Q251. Please describe this program.

A251. Older storage tanks in the Hillview area require replacement in order to ensure storage tanks are in proper working condition, meet safety/structural requirements and ensure safe and reliable service to customers. In late 2021, inspections were performed for these tanks.

California American Water’s Hillview area systems are composed of 21 active potable water storage tank facilities that serve as storage to provide adequate supply of water to the customers. In addition, there are six tanks that are utilized at the three water treatment plants – Forest Ridge WTP, Sierra Lakes WTP, and Raymond WTP. Storage facilities are critical for supplying water during peak demand periods, for fire protection, and for redundancy in short-term cases where sources of supply are not operational.

Replacing aged storage tanks is required to ensure that storage facilities remain reliable, costly failures can be avoided, and OSHA/ANSI safety requirements are met.

California American Water will perform tank replacement for the tanks in the Hillview area for all tanks that were installed prior to 2017. The tanks that were installed prior to 2017 within this project are the following tanks:

Coarsegold Tank 1, Coarsegold Water System (Installed 2001);

Coarsegold Tank 2, Coarsegold Water System (Installed 1981);

Goldside Tank, Goldside Water System (Installed 1996);

Quail Meadows Tank, Oakhurst Water System (Installed 2003);

Vista Heights Tank 1, Oakhurst Water System (Installed 2003);

Vista Heights Tank 2, Oakhurst Water System (Installed 1998);
420 Tank Replacement, Oakhurst Water System (Installed 1984);
40K Tank Replacement, Oakhurst Water System (Installed 1998);
437 Tank Replacement, Oakhurst Water System (Installed 1998);
Site 9 Tank 1 Replacement, Oakhurst Water System (Installed 1995);
Site 9 Tank 2 Replacement, Oakhurst Water System (Installed 1995); and
Site 10 Tank Replacement, Oakhurst Water System (Installed 1995).

All tanks identified above have been installed for a minimum of 19 years and some are as old as 41 years old, based on the tank inspection reports. Tank replacement is also based on the inspection reports prepared by the TIC. Issues that will be resolved by replacement are freeboard deficiency, flexible connections (Seismic), ladder deficiency/safety railing issues, utility access hole size/seal deficiencies, vent deficiencies and overflow deficiencies.

This project was identified in the 2022 Hillview CPS.

16. Project Code I15-670006, Hillview Area Pump Station Rehabilitation Program (2024-2026) (PROPOSED PROJECT)

Q252. Please describe this program.

A252. There are approximately 16 booster pumping station facilities that are critical in the Coarsegold, Goldside, Oakhurst and Raymond systems for providing adequate supply of water to r customers. Ongoing rehabilitation/replacement of the pump stations is required to ensure that these booster stations remain reliable and costly failures are avoided. In addition, many of the pump stations within Hillview Water Systems rely on a single pump and/or do not have the firm capacity to meet current or future peak hour customer demands. Firm capacity is the total pumping capacity of a pump station with the largest pump out of service.

1 The 2022 CPS recommended California American Water address redundancy with
2 pumping equipment at BPS sites that are only equipped with a single pump and increase
3 pumping capacity where required to meet PHD for zones served by the pumps. There are
4 ten booster pump stations identified to require a second pump for redundancy and four
5 booster pump stations identified to require increased pump capacity.

6
7 This project was identified in the 2022 Hillview CPS.

8
9 **17. Project Code I15-670009, Hillview Area WTP PSPS Power Storage**
10 **Project (PROPOSED PROJECT)**

11 Q253. Please describe.

12 A253. The Self-Generation Incentive Program (“SGIP”) is a partnership between the Commission
13 and regulated electric utilities. The program offers financial incentives to applicants for the
14 installation of clean, efficient, on-site distributed energy systems at their facilities that are
15 designed to meet all or a portion of the electric energy needs of the plant.

16
17 California American Water has partnered with Scale Microgrid Solutions to install Battery
18 Energy Storage Solutions (“BESS”) at the Dewey BPS and the American Oaks BPS in its
19 Ventura County District, and at the Lower Wikiup Tank and Booster facility in its
20 Larkfield District. The Company recently received tentative SGIP funding reservations to
21 install similar systems at two water treatment plants in the Hillview area in Madera County.
22 The Company intends to pursue projects at both locations.

23
24 In response to the increasing frequency of wildfires, and the power outages that often
25 accompany them, California American Water has explored various ways to boost its ability
26 to maintain continuity of service as a means of mitigating the impacts to our customers.
27 Participation in the SGIP program provides a flexible, environmentally responsible path to
28 achieve this goal. Additionally, the increased resiliency offered by the energy storage

systems is expected to allow future participation in demand response, load shedding, and other similar programs designed to decrease stress on the state's electric grid. This reinforces California American Water's commitment to being a leading example of environmental responsibility for our customers as well as our neighbors in the communities we serve.

18. Project Code I15-860001, Bass Lake Flat Rate to Metered Conversion (PROPOSED PROJECT)

Q254. Please describe.

A254. California American Water is acquiring Bass Lake water system which has approximately 970 flat rate customers that need to be switched to metered customers. Assembly Bill 2572 requires urban water suppliers to install water meters on all municipal and industrial water service connections on or before January 1, 2025. This project is to install meters, meter boxes, service saddles, and service lines as necessary.

G. Larkfield District Proposed New Projects

The table below summarizes the estimated expenditures by project and year.

Sonoma County Proposed New Capital Investment Projects

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-610024	LRK-PSPS Power Storage Project	2022-2023	\$0	\$0	\$0	\$0
I15-610025	LRK-Main Replacement Program (2024-2026)	Annual	\$4,366,335	\$1,191,453	\$1,202,607	\$1,972,275
I15-610026	LRK-SCADA Master Plan and Improvements Program (2024-2026)	Annual	\$713,925	\$236,285	\$238,820	\$238,820

Project	Description	Start/ Finish	3-Yr Total	2024 Capital Expend.	2025 Capital Expend.	2026 Capital Expend.
I15-610027	LRK-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	Annual	\$899,167	\$297,863	\$300,652	\$300,652
I15-610028	LRK-Well Rehabilitation and Maintenance Program (2024-2026)	Annual	\$490,455	\$162,471	\$163,992	\$162,992
I15-610029	LRK-Larkfield Generator Installations	2024-2024	\$247,785	\$247,785	\$0	\$0
I15-610030	LRK-WTP Treatment Upgrades	2024-2024	\$812,354	\$812,354	\$0	\$0
	Total		\$7,530,021	\$2,948,211	\$1,906,071	\$2,675,739

LRK - Larkfield

**1. Project Code I15-610024, Larkfield PSPS Power Storage Project
(PROPOSED PROJECT)**

Q255. Please describe.

A255. The SGIP is a partnership between the Commission and regulated electric utilities. The program offers financial incentives to applicants at their facilities for the installation of clean, efficient, on-site distributed energy systems that are designed to meet all or a portion of the facilities' electric energy needs.

California American Water has partnered with Scale Microgrid Solutions to install BESS at the Dewey BPS and the American Oaks BPS in its Ventura County District, and at the Lower Wikiup Tank and Booster facility in its Larkfield District in Sonoma County. The Company recently received tentative SGIP funding reservations to install similar systems at two water treatment plants in its Hillview District in Madera County. The Company intends to pursue projects at both locations.

1 The Lower Wikiup Tank and Booster is a pumping/storage facility in the Larkfield District
2 in Santa Rosa, California. The facility houses two concrete tanks with capacities of
3 168,000, and 300,000 gallons, and two 25HP – 85GPM pumps. The primary function of the
4 facility is to provide potable water to customers in the southern portion of the Lower
5 Wikiup pressure zone, and to pump water to Upper Wikiup Tank and Booster, which is in
6 the northern portion of the Lower Wikiup pressure zone. The BESS is expected to provide
7 up to 24 hours of electric power that can be utilized during planned or unplanned power
8 outages.

9
10 In response to the increasing frequency of wildfires, and the power outages that often
11 accompany them, California American Water has explored various ways to boost its ability
12 to maintain continuity of service as a means of mitigating the impacts to our customers.
13 Participation in the SGIP program provides a flexible, environmentally responsible path to
14 achieve this goal. Additionally, the increased resiliency offered by the energy storage
15 systems is expected to allow future participation in demand response, load shedding, and
16 other similar programs designed to decrease stress on the state’s electric grid. This
17 reinforces California American Water’s commitment to being a leading example of
18 environmental responsibility for our customers as well as our neighbors in the communities
19 we serve.

20
21 **2. Project Code I15-610025, Larkfield Main Replacement Program (2024-**
22 **2026) (PROPOSED PROJECT)**

23 Q256. Please describe this program.

24 A256. This program is a continuation of the previously approved Main Replacement Program
25 (I15-610015). The project allows for a planned and prioritized method for replacing mains
26 which have been identified in the 2018 Sonoma County CPS and Buried Infrastructure
27 CBA.
28

The CBA was developed with the intent of allowing California American Water to develop prioritized and planned asset upgrade and replacement programs. For water mains, the CBA asset categorization combines an assessment of likelihood of failure (based primarily on physical pipe characteristics as well as the frequency of reported repairs) and consequence of failure (based on factors including a criticality analysis and population density) to assign an estimated priority to pipes. To proactively replace mains that have been identified as having both a high likelihood of failure and high consequence of failure, a programmatic annual approach is recommended as the most cost-effective solution.

In addition, areas exist where looping existing distribution mains would increase service reliability, foster better water quality, and improve pressures during high demand periods. Similarly, miscellaneous bottlenecks due to small pipe sizes should be relieved by increasing transmission main sizes at certain points.

As part of the CPS process, the hydraulic model was utilized to analyze the system's ability to provide reliable and adequate service based on flow and pressure standards and forecasted customer demands. The hydraulic model of the service area's pipe networks was also used to evaluate potential improvement projects, including main replacements.

Improvement projects to the system's mains are included in this annual main improvement/replacement program for efficient implementation system wide. For example, if the CBA identified a main with a high likelihood and consequence of failure in an area the hydraulic model showed needed to be upsized to meet fire flow standards, a combined annual main improvement/replacement program enables California American Water operators to upsize the CBA-identified main instead of replacing with same-diameter pipe.

This project was identified in the 2018 Sonoma County CPS, specifically in the CBA.

3. Project Code I15-610026, Larkfield SCADA Improvement Program

(2024-2026) (PROPOSED PROJECT)

Q257. Please describe this program.

A257. This program is a continuation of the previously approved SCADA Master Plan and Improvements Program (I15-610017). A significant investment in SCADA equipment has been made to provide better monitoring and control of California American Water facilities throughout the Larkfield service area. To maintain this system, continued maintenance and updates to SCADA systems and equipment must be performed. A comprehensive and well-maintained SCADA system allows for more effective system control, monitoring, record keeping, and system diagnosis.

The goal of the upgrades is to provide reliable communication to all sites, make the SCADA system a priority source for system data, establish a standard automation and equipment upgrade program, and replace obsolete systems and equipment. Upgrades to the SCADA systems at the Larkfield Water Treatment Plant, in addition to the well sites, booster stations, and tank sites, which currently combine recent installations with more outdated equipment, are expected to bring all SCADA systems up to current standards.

SCADA upgrades are expected to allow remote operation as well as real-time recording of well water levels, flow rate, residual chlorine, and pressure. These are expected to also assist California American Water in maintaining and enhancing water system reliability. This program is expected to enable California American Water to efficiently and effectively make continued investments in SCADA as the equipment has a finite life and requires ongoing maintenance and replacement.

This project was identified in the 2018 Sonoma County CPS.

4. Project Code I15-610027 Larkfield Tank Rehabilitation and Seismic

Upgrades 2024-2026) (PROPOSED PROJECT)

Q258. Please describe.

A258. This program is a continuation of the previously approved Tank Rehabilitation and Seismic Upgrades Program (I15-610018). The 2017 Larkfield Tank Study evaluated all existing storage tanks in that area for compliance with the latest seismic standards, structural reliability, and general condition. The tanks are all located in proximity to known fault lines. The study determined that none of the tanks met current seismic design standards. Additionally, implementing the slosh space requirements in the tanks reduces the usable storage capacity of the system by nearly 50%. The condition assessment determined that Upper Wikiup #1, the oldest tank in the system, was not cost-effective to repair and recommended it be replaced. However, this tank was severely damaged in the Tubbs Fire and is expected to be demolished.

The condition assessment of the remaining tanks recommended major rehabilitation of North Wikiup Tank #2 and Lower Wikiup Tank #1 in the 2020 to 2022 timeframe. The remaining three tanks were in good condition and would not require major rehabilitation until approximately 2030. The condition assessment also recommended a detailed structural evaluation to identify and design seismic upgrades specific to each tank. This evaluation was completed in the first quarter of 2022 and identified structural improvements needed to continue operating the tanks at the original design levels; however, the planned addition on the new 0.5 MG tank at the WTP allows the existing tanks to be operated at lower operating levels making the tanks compliant with ASCE structural codes. By adding the new WTP storage tank, the major seismic improvements were able to be avoided. The second phase of the design is underway to perform the remaining tank retrofit recommendations to address rafter rehabilitations, safety improvements, and the lack of flexible connections. The design is expected to be complete in 2022 and the improvements are expected to be installed between 2022 and 2026 as

1 allowed by the program budget. The projects are expected to improve overall system
2 reliability, seismic code compliance, and safety of operations.

3
4 **5. Project Code I15-610028, Larkfield Well Rehabilitation and**
5 **Maintenance Program (2024-2026) (PROPOSED PROJECT)**

6 Q259. Please describe this program.

7 A259. This program is a continuation of the previously approved Well Rehabilitation and
8 Maintenance Program (I15-610016). The ability to reliably provide safe, clean water in
9 adequate quantities to address system needs is the highest priority for California American
10 Water. Groundwater is the primary source of supply for water in the Larkfield; therefore,
11 maintenance of well production facilities including replacement of wells near the end of
12 their structural and hydraulic life is essential to avoiding failure of the wells at critical
13 times.

14
15 Well facilities, above and below ground, require ongoing maintenance, rehabilitation, and
16 replacement to maintain capacity and allow California American Water to continue to
17 provide safe and reliable water supply to customers. Rehabilitation actions range from
18 inspection and cleaning to below-ground improvements (pump removal, chemical
19 treatment) and above-ground improvements (freeze protection, hydropneumatic tank
20 upgrades).

21
22 Using an inclusive evaluation process that includes current performance, condition, etc. for
23 each well as an aid determine those wells that need to be rehabilitated or replaced is
24 expected to provide for a comprehensive program to address the long-term water supply
25 needs of the Larkfield Service Area.

26
27 This project was identified in the 2018 Sonoma County CPS.
28

1 **6. Project Code I15-610029, Larkfield Generator Projects (PROPOSED**
2 **PROJECT)**

3 Q260. Please describe.

4 A260. This program is a continuation of the previously approved Standby Generator Improvement
5 Program (I15-610019). An Emergency Power Study was completed in early 2022 and
6 California American Water will prioritize the generator installations from the list of
7 recommendations from the study.

8
9 Having adequate standby power is imperative for California American Water to meet
10 current or projected average day demands in the event of a power outage. Generators are
11 currently installed at pump stations but not at well sites. California American Water
12 planning criteria require that well production during a power outage should be able to meet
13 the ADD at a minimum. This criterion is not met in the Larkfield service area.

14
15 Generators are currently available at the water treatment plant, the Lower Wikiup booster
16 station and North Wikiup booster station. Additional generators are recommended at Well
17 1A or Well #5 to allow the necessary source of supply for fire flows in the system during
18 outages. An automatic transfer switch is needed at Larkfield Water Treatment Plant to
19 allow continuous operation of the system.

20
21 This project is a significant component of California American Water's ability to supply
22 water under all conditions, particularly when there is a loss of power in the grid.

23
24 This project was identified in the 2018 Sonoma County CPS.

25
26 **7. Project Code I15-610030, Larkfield Water Treatment Upgrades**
27 **(PROPOSED PROJECT)**

28 Q261. Please describe.

1 A261. Larkfield WTP has three treatment vessels for the removal of manganese. The inlet and
2 discharge piping for the three vessels is arranged in a manner that requires the entire
3 treatment system be taken offline to backwash the vessels. The treatment system is a vital
4 component of the Larkfield WTP and requires routine inspection and maintenance for
5 water quality compliance. Inability to isolate individual treatment vessels for routine
6 inspection and maintenance poses a water supply and water quality risk at the treatment
7 plant and the Larkfield water system. This issue has been independently identified by both
8 WTP Operations staff and Engineering Department staff as a risk and in need of
9 improvement. The recommended solution is to design and construct a bypass piping
10 manifold with adequate valving to isolate each vessel.

11
12 The proposed project would provide a bypass piping and valve system to adequately isolate
13 each vessel and associated appurtenances to allow for routine inspection and maintenance.
14 Isolation ability would allow one vessel to undergo maintenance with the remaining two
15 vessels in operation and avoid taking the entire treatment system off-line. This project is
16 expected to benefit the Larkfield Service Area operations and supply.

17 18 **XVI. PLANNING STUDIES AND SYSTEM MAPS**

19 Q262. In general, please discuss the proposed Planning Studies.

20 A262. The proposed budgets account for tasks related to the preparation of a variety of studies as
21 described below.

22 23 **A. Carbon Free Fleet Strategy and Roadmap**

24 Q263. Please describe.

25 A263. Please see Sections IV and V of the Direct Testimony of Edward A. Simon.

26 27 **B. Urban Water Management Plans**

28 Q264. Please describe.

1 A264. Urban Water Management Plans (“UWMP”) are required by the California Department of
2 Water Resources from urban water suppliers that either provide over 3,000 acre-feet of
3 water annually or serve more than 3,000 urban connections. UWMPs are due every five
4 years to support long-term resource planning and water supply sustainability. The last
5 UWMPs were completed in 2021, so new UWMPs are expected to be due in 2026. Cost
6 estimates for these studies are based on the costs of the last UWMPs.

7
8 **C. Water Infrastructure Act - Risk Assessments and Emergency Response Plan**

9 Q265. Please describe.

10 A265. America’s WIA of 2018¹ is a United States federal law that requires water suppliers with
11 greater than 3,300 customers to provide a Risk and Resiliency Assessment (RRA) and plan
12 regarding emergency response. Once that plan is submitted, at least once every five years
13 such utilities are required to review, and where necessary, update that plan. Upon
14 completion of such a review, the system must submit to the EPA a certification that it
15 has reviewed its assessment and revised it, if applicable. California American Water
16 completed the first cycle of assessments in 2020 and 2021. Cost estimates for these studies
17 are based on the costs of the completed 2020 and 2021 RRA.

18
19 **D. Comprehensive Planning Study**

20 Q266. Please describe.

21 A266. The proposed budgets account for tasks related to comprehensive planning studies and the
22 preparation of the associated planning reports for each district of California American
23 Water. These tasks are necessary for evaluation of present facilities’ status, projection of
24 future needs, and identification of the capital projects and/or programs needed so that the
25 assets of each district can provide safe, adequate, and reliable water service to our
26 customers. These tasks are also necessary for developing a list of the proposed capital
27 improvements. The tasks will also evaluate and recommend improvements that could

28

¹ <https://www.congress.gov/bill/115th-congress/senate-bill/3021/text>.

1 reduce operating and maintenance costs. The total CPS costs in California American
2 Water's estimates are based on the studies completed in 2018 and 2019.

3
4 **E. San Diego Recycled Water Use Study**

5 Q267. Please describe.

6 A267. Currently recycled water was investigated in the first phase of the San Diego Alternative
7 Source of Supply Study and several of the large-scale recycled water project options have
8 not become viable. This includes the potential to take recycled water from the South Bay
9 International treatment plant in San Diego, a recycled water project within California
10 American Water's service area and working with the City of San Diego to divert more
11 sewage to their treatment plant. Each of these options has been investigated and
12 unfortunately currently does not have a clear path forward, has opposition, or is no longer
13 an option. For example, the South Bay International Treatment Plant is not a viable source
14 as any excess recycled water it produces is obligated to be transferred back to Mexico.

15
16 These large-scale projects were investigated as a part of the San Diego Alternative Source
17 of Supply Study completed in 2022 as an initial phase of investigation into recycled water.
18 However, considering the need for alternative sources of supply additional planning study
19 investigations should occur under an additional recycled water study in the San Diego
20 County District with the intent on looking into smaller scale recycled water projects and
21 additional groundwater test wells.

22
23 A second phase of recycled water investigations should be performed under this study that
24 would investigate recreational areas and potentially the Navy Coastal Campus as a place to
25 consider recycled water. The Navy Coastal Campus has previously requested interest in
26 recycled water and currently has buildings dual plumbed for water and recycled water
27 when it might be available. These include smaller systems and the need to develop
28 agreements with other participating parties. Investigations would review interest in

recycled water from the customer side, perform additional groundwater test well investigations, investigate potential demands, and look into recycled water treatment system locations.

F. San Diego Alternative Source of Supply Phase II Study

Q268. Please describe.

A268. The Alternative Source of Supply Phase I study began in 2021 and was completed in 2022. The study included investigations into other source water projects including recycled water, new water wells and redundant sources. The recommendation from the study was to continue exploring alternative source water including drilling a test well at the previous Well #8 site. The San Diego Alternative Source of Supply Phase II Study is expected to further investigate other potential groundwater test well locations within the San Diego County District. This study is expected to help to develop a groundwater test well program. The test well investigation would specifically review the feasibility of drilling new wells and constructing a wellhead treatment system within the California American Water service area.

California American Water's San Diego County District system is solely dependent on bulk water purchased from the City of San Diego for its source of supply. The vulnerability of Southern California water systems to short and long-term reductions in imported water is well documented. Efforts to bolster water system resiliency against the impacts resulting from reductions in imported water are important. California American Water must protect itself against the potential for regional reductions in imported water that threaten the adequacy of the San Diego County District's source of supply. The San Diego Alternative Source of Supply Phase II Study is expected to help to provide additional source water options to the San Diego County District when reductions in imported water occur.

G. Ventura Turnout PRV Hydropower Study

Q269. Please describe.

A269. This investment project is expected to investigate opportunities to construct renewable energy projects within the Ventura County District that provide a positive impact on the system and help to offset existing electrical usage.

Water in the Ventura County District service area is provided through 13 turnouts which are all controlled by pressure regulating valves (“PRVs”). Energy generation equipment can be installed at these PRVs which would use the head-loss across the valve to produce “green” power. As part of this study, a feasibility analysis should be performed to select one of the turnout PRVs for further analysis. Once a PRV is selected, the power generation equipment would be installed and analyzed for effectiveness and efficiency. Results of the study would help California American Water identify other PRVs that would have the potential for offsetting electrical costs. This study was identified in the 2019 Ventura County CPS.

H. Larkfield Integrated Water Supply (“IWS”)

Q270. Please describe.

A270. The Larkfield service area is supplied by groundwater wells and water purchased from Sonoma County Water Agency (“SCWA”). The 2019 Sonoma County Comprehensive Planning Study projected a firm supply deficit starting in 2025. In 2021, Sonoma County informed California American Water of changes to land zoning that could increase projected demands. Additionally, SCWA water is not guaranteed, so in critical, dry years, SCWA water may not be available. California American Water plans to complete an Integrated Water Supply Study in 2024. The purpose of the study is expected to be to determine possible supplemental sources and evaluate their implementation feasibility. The study may include exploration of groundwater and surface water sources, aquifer storage and recovery, and reuse. Potential supply sources may be collaborations with nearby water

1 providers or regional water supply solutions. Considerations are expected to be given to
2 water quality, accessibility to the existing distribution system, and availability in dry and
3 critical years. The study may also include field feasibility testing, coordination with local
4 governments and water providers, and exploration of project funding opportunities. The
5 outcome of the study is expected to be a prioritized list of supply options including
6 planning level cost estimates.

8 **I. Monterey Tank Seismic Assessment**

9 Q271. Please describe.

10 A271. The 2019 CPS identified the need for seismic upgrades to some storage tanks. The
11 comprehensive tank inspections conducted once every five years do not include seismic
12 assessments, therefore there is a need to perform a full Tank Seismic Study of the Coastal
13 Division's approximately 100 water storage tanks. The study of the tanks would include
14 condition-based, structural, geotechnical, and hydraulic analyses to determine the overall
15 ability of each tank to withstand seismic events and it would recommend projects needed to
16 bring each tank up to current seismic codes. These recommended improvements are
17 expected to provide added resiliency to the tanks during potential earthquakes and reduce
18 the time needed to bring the system back on-line after an earthquake. These seismic
19 upgrades are expected to be coordinated with the tank rehabilitation program.

21 **J. System Mapping**

22 Q272. In general, please discuss the basis for the budget and the scope of the system mapping and
23 maintenance tasks.

24 A272. The requested budget accounts for acquiring services and consumable material as needed to
25 support California American Water's asset records management staff to maintain system
26 plans, maps, drawings, and other records as required by the Commission's G.O. 103-A,
27 Chapter VII, Operations and Maintenance, Sections 4A and 4B. Similar requirements are
28 also imposed on water utilities by the California Waterworks Standards in Section 64604,

Preparation and Maintenance of Records. Both the Commission's G.O. 103-A and the Waterworks Standards require that California American Water have updated plans, maps, drawings, or other records of all system facilities on file.

K. Scope and Budgets

Q273. What are the proposed budgets for the Districts of California American Water relating to planning studies and system map work?

A273. The following table provides the requested budgets for planning studies and the maintenance of system maps. It should be recognized that the expenditures will be amortized over a three-year period and the annual amounts that will be charged to the expense accounts.

Planning Studies and System Maps Costs				
District	Description	2024	2025	2026
Corporate	Fleet Electrification Study	\$152,000		
CA-Corporate		\$152,000	\$0	\$0
San Diego	Urban Water Management Plan		\$10,500	\$30,800
	Water Infrastructure Act Risk & Resiliency Assessment		\$42,000	
	CPS	\$140,800		
	Recycled Water Use Study	\$200,000		
	Maintenance of System Maps	\$50,000	\$50,000	\$50,000
	Alternative Source of Supply Study	\$126,000		
San Diego Total		\$516,800	\$102,500	\$80,800
Los Angeles	Urban Water Management Plan		\$15,000	\$57,000
	Water Infrastructure Act Risk & Resiliency Assessment		\$44,100	\$77,700
	CPS	\$489,500		
	Maintenance of System Maps	\$74,000	\$74,000	\$74,000
Los Angeles Total		\$563,500	\$133,100	\$208,700
Ventura	Urban Water Management Plan		\$10,000	\$40,000
	Water Infrastructure Act Risk & Resiliency Assessment		\$50,400	
	CPS	\$364,100		
	Turnout PRV Hydropower Study		\$125,000	
	Maintenance of System Maps	\$57,000	\$57,000	\$57,000

Planning Studies and System Maps Costs				
District	Description	2024	2025	2026
Ventura Total		\$421,100	\$242,400	\$97,000
Sacramento	Urban Water Management Plan		\$26,000	\$107,000
	Water Infrastructure Act Risk & Resiliency Assessment		\$155,000	\$250,000
	CPS	\$629,255		
	Maintenance of System Maps	\$165,000	\$165,000	\$165,000
Sacramento Total		\$794,255	\$346,000	\$522,000
Larkfield	Water Infrastructure Act Risk & Resiliency Assessment			\$35,500
	CPS	\$111,045		
	Integrated Water Supply (IWS)	\$200,000		
	Maintenance of System Maps	\$7,600	\$7,600	\$7,600
Larkfield Total		\$318,645	\$7,600	\$43,100
Monterey	Urban Water Management Plan		\$20,000	\$66,000
	Water Infrastructure Act Risk & Resiliency Assessment	\$70,000		
	CPS	\$583,800		
	WW CPS	\$100,000	\$100,000	
	Tank Seismic Assessments		\$500,000	\$500,000
	Maintenance of System Maps	\$120,000	\$120,000	\$120,000
Monterey Total		\$873,800	\$740,000	\$686,000
GRC Totals		\$3,640,100	\$1,571,600	\$1,637,600

L. Monterey Wastewater Consolidation

Q274. What is the purpose of providing the testimony on the Salinas Valley Water Reclamation and Wastewater Treatment Facilities?

A274. The purpose of this testimony is to provide information describing California American Water's Salinas Valley Water Reclamation and Wastewater Treatment Facilities in support of planned projects involving these facilities.

Q275. How many water reclamation facilities (or wastewater treatment plants) are in California American Water's Salinas Valley service area? What are their names and their approximate locations?

1 A275. There are three water reclamation facilities (or wastewater treatment plants) within
2 California American Water's Salinas Valley service area. Their names and approximate
3 locations are:

- 4 • Las Palmas Ranch Water Reclamation Plant, located on the south side of River Road,
5 east of Highway 68.
- 6 • Spreckels Wastewater Treatment Plant, located to the southwest of the Town of
7 Spreckels, east of the Salinas River.
- 8 • Indian Springs Water Reclamation Facility, located on the south side of River Road,
9 east of Highway 68 and west of Indian Springs Road.

10 All facilities are located within the Salinas Valley, several miles to the south/southeast of
11 the City of Salinas.

12 Q276. What is the approximate service area of each water reclamation facility?

13 A276. The approximate service area for each water reclamation facility/wastewater treatment
14 plant is as follows:

- 15 • Las Palmas Ranch Water Reclamation Plant serves the Las Palmas Ranch
16 residential development (Las Palmas Ranch Phase 1 and Phase 2). Las Palmas
17 Phase 1 includes residential connections along roads connected to Riverview Court
18 along River Road. Las Palmas Ranch Phase 2 includes residential connections
19 along Las Palmas Parkway and connecting side streets.
- 20 • Spreckels Wastewater Treatment Plant serves the Town of Spreckels, including the
21 farmworker housing community.
- 22 • Indian Springs Water Reclamation Facility serves the residential connections along
23 Black Mountain Road, Oak Canyon Road, Indian Springs Road, Murietta Road, and
24 Heritage Ct., as well as cul-de-sacs within.

Q277. What was the basis of design for each facility related to nitrogen removal, in other words, was each facility designed to achieve nitrogen removal and if so, to what level?

A277. Each facility was designed for the following levels of nitrogen removal:

- Las Palmas Ranch Water Reclamation Plant (“LPRWRP”) has two plants (Plants 1 and 2). Plants 1 and 2 are designed with a trickling filter secondary treatment system that was not designed to achieve any significant nitrogen removal. The 2006 permit (WDR R3-2006-0041) for the facility only required LPRWRP to meet a 7-day effluent nitrate (as N) concentration of 10 mg/L or less, but there were no limits for ammonia or total nitrogen. The original design criteria were also based on an influent total nitrogen concentration that is significantly lower than the influent total nitrogen concentration observed in recent data.
- Spreckels Wastewater Treatment Plant is a facultative treatment pond system with surface pond aerators that was not designed to achieve any significant nitrogen removal.
- The Indian Springs Water Reclamation Facility (“WRF”) is an activated sludge package plant. The WRF currently achieves significant total nitrogen removal. The original basis of design for achieving nitrogen removal is unknown but does not appear to be originally designed for significant nitrogen removal based on the review of the facility treatment process. The current Indian Springs WRF permit (Order No. 83-03) for the facility did not state specific limitations on effluent nitrogen or nitrate concentrations, but only stated that groundwater nitrogen concentrations were to be monitored and should not exceed 10 mg/L (as N).

Q278. How is the treated plant effluent water reused at each facility?

A278. Reclaimed/recycled water is utilized at each facility in the following manner:

- Following chlorination, Las Palmas Ranch Water Reclamation Plant Plants 1 and 2 convey treated plant effluent to two recycled water storage ponds. From the storage ponds, flow is conveyed through recycled water infrastructure for irrigation of greenbelts within the Las Palmas Ranch development.
- Spreckels Wastewater Treatment Plant does not reuse any flow for recycled water purposes, such as irrigation. The operations staff report that all flow is maintained within the treatment pond and discharge into the disposal pond has not yet occurred, likely due to lower than planned influent flows and evaporation from the lined pond.
- Following chlorination, the Indian Springs Water Reclamation Facility conveys treated plant effluent to a recycled water storage pond. All disposal flow is then conveyed to a reclamation spray field area. There are no reclaimed water customers/users.

Q279. You mentioned the Las Palmas Ranch water reclamation plant. What is the current state of that treatment system?

A279. A Title 22 Engineering Report (Valentine, 2021) was recently developed for the Las Palmas Ranch Water Reclamation Plant (“LPRWRP”) and submitted to the RWQCB/Division of Drinking Water. The Title 22 Engineering Report identified improvements required for LPRWRP based on capacity evaluation for current and projected future influent flow as well as input from operations staff regarding the condition/operability of the treatment plant equipment. The following summarizes upgrades identified through the Title 22 Engineering Report including:

- Trickling Filters: Operations staff reported several significant issues with the trickling filters. The Plant 1 trickling filter vessels are brittle and cracked. These vessels are beyond their useful life. Debris that the existing influent screen does not capture periodically needs to be removed from the trickling filters as this debris

1 plugs the nozzles. It is also difficult and more dangerous for operations staff to
2 access the nozzles as these nozzles are more than 10 feet above ground surface. The
3 trickling filter media is thought to not be evenly fed and thus not operating
4 optimally. In addition, there are issues with being able to achieve nitrogen removal
5 as discussed above.

- 6 • Clarifiers: Sludge is not removed evenly from the clarifiers and accumulates in the
7 clarifiers over time.
- 8 • Sludge Dewatering Screw Press: The sludge dewatering screw press is approaching
9 its current capacity.

10
11 Q280. What recent improvements have been completed at the Las Palmas Ranch Water
12 Reclamation Facility?

13 A280. The following improvements have recently been completed at the Las Palmas Ranch WRF:

- 14
15 • In 2020, the influent screen was replaced with a stainless-steel screen.
- 16 • The tracer study that was conducted as part of the Title 22 Engineering Report
17 effort determined that the 90-minute disinfection modal contact time was not
18 achieved. The chlorine contact basin was expanded in early 2021 through the
19 addition of larger piping on the back end of the chlorine contact basin to
20 successfully achieve the 90-minute modal contact time.

21
22 Q281. You mentioned the Indian Springs Water Reclamation Facility. What is the current state of
23 that treatment system?

24 A281. Operations staff has reported that the Indian Springs WRF requires the following upgrades
25 to maintain operability/maintain compliance:

- 26
27 • Chlorine contact basin upgrades to increase chlorine contact basin size and achieve
28 90-minute modal contact time required by the RWQCB.

- Equalization basin upgrades to improve hydraulics and upgrade equalization pumps to have variable flow capability linked to the Plant SCADA system.
- Addition of turbidity and chlorine analyzers for continuous monitoring.
- SCADA upgrades to maintain plant monitoring capability.

Q282. What improvements have been completed at the Indian Springs WRF?

A282. There have been no major recent improvements completed at the Indian Springs WRF.

Q283. You mentioned the Spreckels Wastewater Treatment Plant. What is the current state of that treatment system?

A283. The Spreckels Wastewater Treatment Plant is comprised of a 12-acre clay lined treatment pond and an eight acre unlined disposal pond. The treatment pond is equipped with floating aerators. The operations staff report that the discharge into the disposal pond has not yet occurred, likely due to lower than planned influent flows and evaporation from the lined pond. There have been some past discussions with the RWQCB about the integrity of the existing liner. Replacing the liner may include a dual geomembrane liner system with leak detection for the treatment pond along with partitioning into two approximate six acre ponds to allow for taking a pond out of service. The facility does not have any headworks at this time. Headworks screening is desired to help prevent large solids from entering and accumulating in the treatment pond.

Q284. What improvements have been completed at the Spreckels WWTP?

A284. There have been no major recent improvements completed at the Spreckels WWTP.

Q285. What changes have recently been adopted by the regional water quality control board with regard to waste discharge permits?

A285. Recent permitting requirements established by the RWQCB under Order No. R3-2020-0020 (General Waste Discharge Requirements for Discharges from Domestic Wastewater

1 Systems with Flows Greater than 100,000 gallons per day (“gpd”) have new effluent permit
2 requirements, such as decreased effluent total nitrogen limits for facilities with flows
3 greater than 100,000 gpd.
4

5 Q286. How do these changes impact each of the Salinas Valley Water Reclamation/Wastewater
6 Treatment Facilities?

7 A286. The recent permitting requirements established by the RWQCB under Order No. R3-2020-
8 0020 impact each of the Salinas Valley facilities as follows:
9

- 10 • Las Palmas Ranch WRP: As discussed within the Title 22 report prepared by
11 Valentine, the facility is required to maintain an effluent total nitrogen limit of 10
12 mg/L N under the RWQCB Order No. R3-2020-0020. The existing trickling filters
13 partially nitrify the raw wastewater. To achieve nitrogen removal, one must fully
14 nitrify the raw wastewater from ammonia to nitrate and then denitrify the nitrate to
15 nitrogen gas under an anoxic environment. The ability of the existing trickling
16 filters to provide complete nitrification was evaluated, but it was determined that
17 the existing trickling filters are not sized for the flows/influent total nitrogen
18 loading to be able to perform significant nitrification. Furthermore, the existing
19 treatment process is not completely set up for the denitrification step in nitrogen
20 removal. One train is equipped with a denitrification tank, while the other train is
21 not. Additional tankage and supplemental carbon source would be required to
22 achieve denitrification and hence complete nitrogen removal. Thus, a new treatment
23 process that involves nitrogen removal is expected to need to be implemented for
24 the facility.
25
- 26 • Indian Springs WRF: While the Indian Springs WRF is below 100,000 gpd flow,
27 the RWQCB has expressed a strong desire to implement nitrogen removal at the
28 Indian Springs WRF. The draft technical report for this facility in 2017 prepared by

Valentine reviewed the influent and effluent wastewater quality. The historical effluent total nitrogen is between 9.7 to 11.1 mg/L. Although there are not any typical features in the current tank design that would be conducive for nitrogen removal (anoxic zone, internal recycle pumps), that does not mean that simultaneous nitrification-denitrification is not occurring, especially if dissolved oxygen concentrations are maintained at 1 mg/L or less and there are anoxic pockets in the tank. If the RWQCB requires further nitrogen removal to stay within the 10 mg/L effluent total nitrogen, the improvements to drive total nitrogen further may include the following:

- Partitioning basins to create an anoxic zone
 - Install internal recycle pumps to return nitrified mixed liquor back to the front of the treatment tanks.
 - Install baffling in the anoxic zone to promote plug flow and optimize detention time.
 - Install a carbon addition facility to supplement the incoming Biological Oxygen Demand (“BOD”) and improve nitrogen removal.
- Spreckels WWTP: Since there are no discharges from the Spreckels WWTP, the Spreckels WWTP is understood to not require any upgrades to meet RWQCB R3-2020-0020 at this time.

Q287. What options does California American Water have with respect to modifying the existing water reclamation/wastewater treatment facilities?

A287. California American Water has the option to either upgrade the water reclamation/wastewater treatment facilities and/or consolidate the facilities. Consolidating facilities requires new sewage force mains and lift stations to convey sewage from collection systems to another facility. Significant consideration would be required for

consolidating the facilities including evaluation of the available site footprint to implement treatment facilities accommodating larger flows, ability to dispose of treated effluent (recycled water), and ability to construct a larger capacity treatment facility while keeping the existing active treatment facility online. LPRWRP and Indian Springs WRF in particular could be consolidated into one treatment facility by sending the Indian Springs collection system sewage to the LPRWRP and increasing the capacity of the LPRWRP with a nitrogen removal treatment process. It is not recommended to consolidate the Spreckels WWTP with another facility (Indian Springs WRF or LPRWRP) as this would require a crossing below the Salinas River.

Q288. Are there any other options available to California American Water?

A288. Yes, there is the potential option to sewer all of the Salinas Valley WRF/WWTP facilities into the Monterey One Water regional wastewater plant via construction of new Pump Stations and force mains.

Q289. Can you provide more discussion of the option that is available to California American Water on a regional level?

A289. The regional option involves California American Water combining the collection systems associated with the LPRWRP, Spreckels WTP and the Indian Springs WTP to the Monterey One Water Regional Facility in Salinas.

This concept has been evaluated in previous studies with several iterations of studies performed between 1998 and 2018. The studies evaluated the construction of force mains and lift stations to bring flows from these service areas (as well as additional service areas) to Monterey One Water's Salinas Pump Station (which ultimately pumps sewage to the Monterey One Water Regional facility). According to previous studies, the Monterey One Water Regional facility has the capacity to accept the sewage collection flows from these service areas to include Las Palmas Ranch, Indian Springs and Spreckels service areas.

At this time, four lift stations (or sewage pump stations) and approximately 9 miles of force main are assumed to be required. The alignment follows the previous studies by installing a lift station at Spreckels WWTP and bringing Spreckels sewage through a force main along Spreckels Road to a new “Combined Flow” lift station at Highway 68. The Indian Springs collection system would be conveyed to Las Palmas by an Indian Springs pump/lift station and force main. The combined flow with Las Palmas would then be pumped by a pump/lift station and force main that extends along River Road and along Highway 68 to the “Combined Flow” lift station. From there, the combined flow of Spreckels, Indian Springs, and Las Palmas would be conveyed to Monterey One’s Salinas Pump Station, which ultimately pumps to the Regional Facility.

Q290. What Additional Information needs to be collected to fully vet this option?

A290. While previous reports have stated that the Monterey One Water Regional facility had adequate treatment capacity to accept the sewage from the Las Palmas Ranch, Indian Springs, and Spreckels collection systems, this should be confirmed by Monterey One with more recent evaluation/planning data. In addition, the Salinas Pump Station and downstream force main capacity that pumps to the Regional Facility should be evaluated to ensure adequate capacity is available. The impact of removing the beneficial use of recycled water in the Salinas Valley also needs to be vetted with regulatory agencies and the current end users. For these reasons, California American Water would like to recommend a preliminary investigation into this option that examines the option further through more detailed investigation of pumping and pipeline requirements, costs, operations, and maintenance, as well as non-monetary impacts on the community.

Q291. Given the numerous considerations related to the Salinas Valley WRF/WWTP facilities upgrades, what is California American Water proposing to do in the short term?

A291. California American Water is proposing to further evaluate the options discussed above. The detailed study is expected to fully vet the options based on technical and socio-

1 economic merits. While the RWQCB implemented Order No. R3-2020-0020, California
2 American Water has had discussions with the RWQCB to explain the current status and the
3 RWQCB has indicated that this approach is acceptable.
4

5 Q292. What would be general scope of the Salinas WRF system study?

6 A292. The general scope is expected to include evaluating the unconsolidated, consolidated, and
7 regional options further with more detailed evaluation of footprint requirements based on
8 manufacturer information, required electrical utility upgrades, impacts to environmental
9 and recycled water customers (such as the loss of recycled water irrigation to the Las
10 Palmas Ranch area) and identifying any special considerations for construction of
11 alternatives.
12

13 Q293. How will California American Water gather stakeholder input and incorporate that into the
14 study?

15 A293. California American Water is expected to develop plans and short memorandums to share
16 with stakeholders based on the potential options discussed above. These documents are
17 expected to be shared with stakeholders and stakeholder meetings are expected to be
18 arranged to gather stakeholder input on the options.
19

20 Q294. Following the study, what would be the long-term steps that California American Water
21 would take?

22 A294. The goal of the study would be for California American Water to evaluate all options in
23 significant detail and to compare all options holistically, then to select the most feasible and
24 cost-effective option to move forward with and present this information and
25 recommendation to the Commission in the future.
26

27 **XVII. TANK MAINTENANCE**

28 Q295. What is the next area of concern that you will discuss?

1 A295. I will address the procedures for determining Deferred Program Maintenance costs.

2 California American Water proposes certain tank improvement projects, including tank
3 painting expenses, as part of its tank maintenance program. Tank maintenance maximizes
4 the life span of the tanks and reservoirs, as well as implements improvements to meet
5 existing and future laws, codes, and regulations.

7 Q296. Please explain the process you developed regarding the determination of Deferred Program
8 Maintenance costs.

9 A296. Engineering staff request tank inspections every five years from outside consultants, such
10 as TIC. TIC reports provide details on the integrity and condition of the tank inspected,
11 when it should be inspected next, and give estimates on the cost to rehab the tank.

12 Engineering staff rely on these reports as the basis to update the status of the remaining
13 unfinished or not started projects. Engineering staff also used these reports to determine
14 whether there should be any additional projects listed on the schedule. Costs for each
15 project are allocated among future years based on the amortization period. Amortization
16 periods for the projects vary, but they are typically either 60 months (inspections) or 120
17 months (painting and rehab projects).

19 **San Diego County District Tank Maintenance**

Tank Maintenance	2024	2025	2026	Total
Montgomery		\$144,238		\$144,238
Total		\$144,238		\$144,238

22 **Monterey County District Tank Maintenance**

Tank Maintenance	2024	2025	2026	Total
Aguajito 2		\$225,300		\$225,300
Airways, Upper	\$3,100			\$3,100
Boots		\$3,300		\$3,300
Boyd	\$3,300			\$3,300
C.V. Clearwell A		\$3,300		\$3,300
C.V. Clearwell B		\$3,300		\$3,300
Carmel Valley Ranch		\$3,300		\$3,300
Carmel Woods 1	\$3,300			\$3,300
Carmel Woods 2	\$3,300			\$3,300
Carola Hydro			\$4,000	\$4,000
Chualar 1	\$3,300			\$3,300

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Tank Maintenance	2024	2025	2026	Total
Chualar Hydro		\$4,000		\$4,000
Corral (Middle)		\$3,300		\$3,300
Corte Cordillera 1	\$3,300			\$3,300
Corte Cordillera 2	\$3,300			\$3,300
Corte Cordillera Hydro		\$4,000		\$4,000
Country Club Heights	\$3,300		\$404,000	\$407,300
Crest Canyon	\$3,300			\$3,300
Del Mesa	\$3,300			\$3,300
Eddy Rd (Vista Hermosa)		\$3,300		\$3,300
Fairways 1	\$3,300			\$3,300
Fairways 2	\$3,300			\$3,300
Fairways 3	\$3,300			\$3,300
Forest Lake 1	\$2,798,000	\$3,300		\$2,801,300
Tank Maintenance	2024	2025	2026	Total
High Meadows 1		\$3,300		\$3,300
Hilby Hydro 2	\$4,000			\$4,000
Huckleberry 2		\$3,300		\$3,300
Los Tulares, Upper		\$3,300		\$3,300
Markham, Lower		\$3,300		\$3,300
Markham, Upper		\$3,300		\$3,300
Mercurio	\$3,300			\$3,300
Middle Canyon 2, Lower	\$3,300			\$3,300
Middle Canyon, Upper		\$223,300	\$3,300	\$226,600
Ord Grove			\$3,300	\$3,300
Pebble Beach 1	\$3,300			\$3,300
Presidio 1			\$3,300	\$3,300
Quail Meadows	\$3,300			\$3,300
Ralph Lane Hydro	\$4,000			\$4,000
Rancho Fiesta, Lower	\$3,300			\$3,300
Rancho Mar Monte Hydro		\$4,000		\$4,000
Rio Vista 1			\$430,500	\$430,500
Rio Vista 2			\$174,000	\$174,000
Rio Vista 3	\$3,300		\$167,000	\$170,300
U Robles, Upper			\$3,300	\$3,300
Robles, Lower			\$3,300	\$3,300
Segunda 1			\$3,300	\$3,300
Spectacular Bid 2			\$3,300	\$3,300
Stirrup			\$3,300	\$3,300
Tierra Grande, Lower			\$3,300	\$3,300
Tierra Grande, Middle			\$3,300	\$3,300
Tierra Grande, Upper			\$3,300	\$3,300
Toyon 1, Lower			\$3,300	\$3,300
Toyon 1, Upper	\$3,300			\$3,300
U Estrealla D'oro Hydro	\$4,000			\$4,000
U Markham Hydro			\$4,000	\$4,000
U Tierra Grande Hydro			\$4,000	\$4,000
Withers 3	\$3,300			\$3,300
Withers 4	\$3,300			\$3,300
York Road			\$3,300	\$3,300
Total	\$2,885,700	\$987,200	\$1,237,000	\$5,109,900

Tank Maintenance	2024	2025	2026	Total
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Los Angeles County District Tank Maintenance

Tank Maintenance	2024	2025	2026	Total
Angeles Mesa			\$208,811	\$208,811
Bliss Canyon		\$192,480	\$3,400	\$195,880
Danford		\$2,254		\$2,254
East Pasadena #1	\$3,000			\$3,000
East Pasadena #2a	\$2,500			\$2,500
East Pasadena #2b	\$2,500			\$2,500
Fish Canyon	\$2,187			\$2,187
Garth			\$3,493	\$3,493
High Mesa		\$4,210		\$4,210
Homeland			\$3,060	\$3,060
Lamanda			\$3,059	\$3,059
Tank Maintenance	2024	2025	2026	Total
Lemon			\$3,059	\$3,059
Mt Vernon			\$2,622	\$2,622
Mt Vernon Hydro	\$4,000			\$4,000
Oak Knoll		\$2,630		\$2,630
Olympiad			\$2,622	\$2,622
Patton		\$2,415		\$2,415
Rosemead		\$2,254		\$2,254
Starpine		\$2,254		\$2,254
Vinyard	\$4,480			\$4,480
Total	\$18,667	\$208,497	\$230,126	\$457,290

Ventura County District Tank Maintenance

Tank Maintenance	2024	2025	2026	Total
Deer Ridge		\$5,000		\$5,000
Industrial Park 1			\$420,000	\$420,000
Industrial Park 2		\$5,690		\$5,690
Janss			\$4,640	\$4,640
Las Posas #2	\$4,000			\$4,000
Los Robles #1	\$3,700			\$3,700
Los Robles #2	\$3,700			\$3,700
Moorpark	\$4,320			\$4,320
Orbis	\$4,480			\$4,480
Pace	\$3,900			\$3,900
Potrero #2		\$4,320		\$4,320
Rio Plaza Hydro 1	\$5,000			\$5,000
Rio Plaza Hydro 2	\$5,000			\$5,000
Wildwood		\$4,640		\$4,640
Total	\$34,100	\$19,650	\$424,640	\$478,390

Sacramento District Tank Maintenance

Tank Maintenance	2024	2025	2026	Total
405,000 Reservoir	\$4,300			\$4,300
Andrea 2 Hydro			\$4,000	\$4,000
Briggs Hydro		\$4,000		\$4,000

1	Tank Maintenance	2024	2025	2026	Total
	Caldera Hydro	\$4,000			\$4,000
2	Cedar Ridge	\$4,300			\$4,300
	Centruy Hydro		\$4,000		\$4,000
3	Cherbourg Hydro	\$4,000			\$4,000
	Chett Hydro	\$4,000			\$4,000
4	Collg Hydro			\$4,000	\$4,000
	Conrad Hydro			\$4,000	\$4,000
5	Contact Reservoir	\$4,300			\$4,300
	Cook Hydro	\$4,000			\$4,000
6	Cook Riolo			\$4,300	\$4,300
	Countryside BWT			\$4,300	\$4,300
7	Countryside Plant Finished Water			\$4,300	\$4,300
	Daly Hydro		\$4,000		\$4,000
8	David Hydro		\$4,000		\$4,000
9	Tank Maintenance	2024	2025	2026	Total
	Dunnigan Hydro 1			\$4,000	\$4,000
10	Dunnigan			\$4,300	\$4,300
	Eagle Ridge Hydro			\$4,000	\$4,000
11	Fairlake 2 Hydro	\$4,000			\$4,000
	Falls Tank	\$4,300			\$4,300
12	Fruitridge BWT Hydro 1	\$4,000			\$4,000
	Fruitridge BWT Hydro 2		\$4,000		\$4,000
13	Fruitridge Well 10 Hydro			\$4,000	\$4,000
	Fruitridge Well 17 Hydro	\$4,000			\$4,000
14	Fruitridge Well 18 Hydro		\$4,000		\$4,000
	Fruitridge Well 19 Hydro			\$4,000	\$4,000
15	Fruitridge Well 4 Hydro	\$4,000			\$4,000
	Fruitridge Well 5 Hydro		\$4,000		\$4,000
16	Fruitridge Well 6 Hydro			\$4,000	\$4,000
17	Fruitridge Well 9 Hydro	\$4,000			\$4,000
	Goldside Sutt Hydro			\$4,000	\$4,000
18	H Line Tank	\$4,300			\$4,300
	Hemlock Hydro			\$4,000	\$4,000
19	Hobst Hydro			\$4,000	\$4,000
20	Island View TP B			\$4,300	\$4,300
	Island View TP Storage			\$4,300	\$4,300
21	Isleton 5th St BWT Supply			\$4,300	\$4,300
	Isleton 5th St BT			\$4,300	\$4,300
22	Isleton 5th St Storage			\$4,300	\$4,300
	Isleton H Street Hydro		\$4,000		\$4,000
23	Malag Hydro	\$4,000			\$4,000
	Mather			\$4,300	\$4,300
24	Meadowbrook Well 4 Hydro		\$4,000		\$4,000
25	Meadowbrook Well 5 Hydro			\$4,000	\$4,000
	N Loop Hydro	\$4,000			\$4,000
26	Oak Forest Hydro	\$4,000			\$4,000
	Oaken Bucket Hydro		\$4,000		\$4,000
27	Oxbow 1 Hydro			\$4,000	\$4,000
	Palmerson Hydro		\$4,000		\$4,000
28	Parksite 1			\$4,300	\$4,300

Tank Maintenance	2024	2025	2026	Total
Parksite 2			\$4,300	\$4,300
Parksite BWT Recovery No. 1			\$4,300	\$4,300
Pines Tank 1	\$4,300			\$4,300
Pines Tank 2	\$4,300			\$4,300
Ptrey Hydro			\$4,000	\$4,000
Raymond Hydro			\$4,000	\$4,000
Rhine Hydro			\$4,000	\$4,000
Ridgeline	\$4,300			\$4,300
Rockhurst Hydro	\$4,000			\$4,000
Roseville Hydro		\$4,000		\$4,000
Rushmore Hydro			\$4,000	\$4,000
Salmon Hydro	\$4,000			\$4,000
Shilo Hydro			\$4,000	\$4,000
Sierra Lake Hydro			\$4,000	\$4,000
Sky Parkway Hydro		\$4,000		\$4,000
Tank Maintenance	2024	2025	2026	Total
Southgate Hydro			\$4,000	\$4,000
Swans Well Hydro		\$4,000		\$4,000
Tilly Ho 1 Hydro		\$4,000		\$4,000
Van Maren Hydro	\$4,000			\$4,000
VH Hydro			\$4,000	\$4,000
Vintage TP Finished Water	\$1,281,000	\$4,300		\$1,285,300
Wagon Hydro	\$4,000			\$4,000
Walerga Tank			\$4,300	\$4,300
Walnut Grove Well 1 Hydro	\$4,000			\$4,000
Watta Hydro		\$4,000		\$4,000
White Well Hydro			\$4,000	\$4,000
Wildrose Hydro			\$4,000	\$4,000
Wyda Hydro		\$4,000		\$4,000
Total	\$1,383,400	\$72,300	\$152,200	\$1,607,900

Larkfield District Tank Maintenance

Tank Maintenance	2024	2025	2026	Total
N Wikiup Hydro	\$4,000			\$4,000
Upper Wikiup Hydro	\$4,000			\$4,000
Total	\$8,000			\$8,000

Q297. Does this conclude your testimony?

A297. Yes.

ATTACHMENT 1

District #	1501
District Name	CAW Corporate

Row Labels	Project Description	Sum of Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPK	ITS Equipment and Systems	214,269	801,891	736,519	781,373	990,608	3,524,660
	AW Enterprise Solutions	1,414,539	3,711,398	3,570,548	3,570,548	3,570,548	15,837,579
CAPRPM	Security Equipment and Systems	-	24,842	-	28,940	29,250	83,032
CAPRPN	Offices and Operations Center	-	203,106	148,492	192,932	195,002	739,531
CAPRPP	Tools and Equipment	77,401	-	-	-	-	77,401
I15610014	LRK-Larkfield Wildfire Recovery (CEMA)	159,977	1,070,851	-	-	-	1,230,827
I15010003	CA-California Corporate Office (Preliminary)	-	-	-	-	3,115,041	3,115,041
I15400150	MRY-CRRDR Wildfire Recovery (CEMA 2020)	103,316	394,492	51,289	-	-	549,097
Grand Total		1,969,502	6,206,579	4,506,847	4,573,792	7,900,448	25,157,168

District #	1530
District Name	San Diego County District

Row Labels	Project Description	Sum of					
		Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPC	Mains - Unscheduled	280,014	292,139	298,963	421,556	385,128	1,677,799
CAPRPE	Hydrants/Valves/Manholes - New	-	11,924	11,879	11,576	11,700	47,079
CAPRPF	Hydrants/Valves/Manholes - Replaced	15,228	171,905	176,210	177,497	184,276	725,117
CAPRPG	Services and Laterals - New	-	3,975	4,059	4,052	4,290	16,375
CAPRPH	Services and Laterals - Replaced	70,797	515,715	544,469	653,074	625,955	2,410,010
CAPRPI	Meters - New	56	14,905	15,344	19,100	19,988	69,393
CAPRPJ	Meters - Replaced	(1,679)	458,082	470,224	783,785	609,380	2,319,791
CAPRPM	Security Equipment and Systems	3,121	22,854	23,462	23,634	24,375	97,446
CAPRPN	Offices and Operations Center	-	56,639	58,407	58,362	61,425	234,833
CAPRPO	Vehicles	-	95,240	26,356	-	36,342	157,938
CAPRPP	Tools and Equipment	40,379	71,544	73,454	73,700	76,636	335,713
CAPRPQ	Plant Facilities and Equipment	28,087	31,797	32,668	32,798	35,100	160,451
D153001	Projects Funded by Others	215,940	392,350	392,350	392,350	392,350	1,785,340
I15300006	SD PRV Modernization Program	1,305,874	778,851	-	-	-	2,084,725
I15300008	SD-Replace 2,450 Ft of 18" Main- Elm Ave	3,017,692	340,747	-	-	-	3,358,439
I15300010	SD-Replace 52,000 Ft of 16" Main- The Strand	235,760	889,251	2,437,410	7,581,974	7,652,955	18,797,350
I15300014	SD-Coronado Reliability Supply Project	100,536	681,494	-	-	-	782,031
I15300018	SD-SCADA Improvements Program	-	73,017	72,744	70,885	71,646	288,292
I15300020	SD-New Coronado Storage Tank and Pump Station	-	-	-	866,511	874,623	1,741,135
I15300021	SD-Strand Two-Way Pump Station	-	574,402	436,461	-	-	1,010,864
I15300022	SD-Remove NAB Abandoned PS Vault	-	-	-	-	-	-
I15300023	SD-Transbay Transmission Main Rehabilitation Project	-	-	-	617,389	874,623	1,492,013
I15300024	SD-Main Replacement Program (2021-2023)	-	1,121,520	2,235,010	-	-	3,356,530
I15300026	SD-Main Replacement Program (2024-2026)	-	-	-	3,223,422	3,863,649	7,087,071
I15300027	SD-Alternative Source of Supply Project	-	-	-	270,785	273,320	544,105
Grand Total		5,311,805	6,598,351	7,309,470	15,282,450	16,077,762	50,579,839

District #	1540
District Name	Monterey County District

Row Labels	Project Description	Sum of Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPC	Mains - Unscheduled	101,998	498,822	546,449	571,078	643,505	2,361,853
CAPRPE	Hydrants/Valves/Manholes - New	-	-	-	-	-	-
CAPRPF	Hydrants/Valves/Manholes - Replaced	83,221	462,056	460,324	448,566	453,379	1,907,546
CAPRPG	Services and Laterals - New	113,020	-	-	-	-	113,020
CAPRPH	Services and Laterals - Replaced	193,878	1,448,770	1,443,339	1,475,927	1,523,937	6,085,852
CAPRPJ	Meters - Replaced	195,347	1,324,562	1,319,596	2,049,899	2,123,080	7,012,483
CAPRPL	SCADA Equipment and Systems	6,856	32,791	34,648	35,692	38,025	148,012
CAPRPM	Security Equipment and Systems	31,893	99,367	98,994	99,360	103,351	432,965
CAPRPN	Offices and Operations Center	1,630	4,968	9,899	9,936	10,335	36,769
CAPRPO	Vehicles	-	234,925	653,637	308,198	97,501	1,294,261
CAPRPP	Tools and Equipment	-	83,468	85,135	84,890	87,751	341,244
CAPRPQ	Plant Facilities and Equipment	133,170	378,588	386,078	385,863	401,703	1,685,403
D154001	Projects Funded by Others	128,337	453,150	453,150	453,150	453,150	1,940,937
I15400097	MRY-Interconnect RR, HH, Bishop	580,592	681,494	426,762	472,570	1,432,919	3,594,337
I15400104	MRY-Advanced Metering Infrastructure	293,191	148,103	-	-	-	441,294
I15400108	MRY-Standby Power/Emergency Generators (PSPS) Phase 2 Gen. Plugs	260,717	364,049	-	-	-	624,766
I15400109	MRY-Los Padres Dam Facilities Improvements	226,918	55,578	-	216,628	-	499,124
I15400110	MRY-Begonia Iron Removal Plant Improvements	2,698,983	97,356	-	-	-	2,796,339
I15400117	MRY-Los Padres Dam DSOD Improvements	472,383	50,978	101,591	-	-	624,953
I15400120	MRY-Booster Station Rehab Program (2018-2020)	-	29,207	-	-	-	29,207
I15400122	MRY-Los Padres Dam NMFS MOA Requirements	799,907	764,200	1,551,079	541,570	546,640	4,203,395
I15400124	MRY-Huckleberry Hydropneumatic Tank Replc	731,894	194,713	-	-	-	926,606
I15400125	MRY-Main Replacement Program (2021-2023)	783,497	3,058,690	3,047,741	-	-	6,889,928
I15400126	MRY-Fire Protection Program (2021-2023)	35,076	367,043	365,729	-	-	767,847
I15400127	MRY-Pump Station Rehabilitation Program (2021-2023)	200,589	937,998	934,641	-	-	2,073,228
I15400128	MRY-SCADA Maintenance and Improvements Program (2021-2023)	833,202	389,425	387,965	-	-	1,610,593
I15400129	MRY-Tank Rehabilitation Program (2021-2023)	63,716	458,804	558,753	-	-	1,081,272
I15400130	MRY-Carmel Woods #1 and #2 Tank Replacement	-	-	221,583	216,628	1,311,935	1,750,146
I15400131	MRY-Well Rehabilitation Program (2021-2023)	128,838	999,172	833,049	-	-	1,961,059
I15400133	MRY-Phase 2 BIRP Improvements	-	555,782	1,551,079	866,511	-	2,973,372
I15400135	MRY-Arc Flash Mitigation	67,912	214,184	96,991	-	-	379,087
I15400136	MRY-Ambler Water Treatment Solids Residual Handling	-	389,047	465,324	595,727	-	1,450,097
I15400137	MRY-Del Rey Regulating Station	-	166,735	354,532	1,083,139	546,640	2,151,046
I15400138	MRY-Rancho Fiesta Tanks and Pump Station	-	166,735	686,906	541,570	1,093,279	2,488,490
I15400140	MRY-Standby Generator Improvement Program (2021-2023)	-	203,913	457,161	-	-	661,074
I15400141	MRY-New Carmel Valley Well	312,183	555,782	553,957	1,083,139	1,093,279	3,598,340
I15400142	MRY-Ralph Lane Interconnect	-	-	-	-	350,448	350,448
I15400143	MRY-Forest Lake Pump Station	1,061,758	1,849,771	-	-	-	2,911,529
I15490001	GAR-Garrapata Slide Recovery	1,745,377	292,069	-	-	-	2,037,446
I15400144	MRY-CRRDR Pipe Removal	-	-	-	-	-	-
I15400152	MRY-Los Padres Dam Outlet Modifications	272,582	500,204	664,748	1,083,139	-	2,520,673
I15400153	MRY-Eardley-Forest Lake Transmission Main Replacement	-	-	-	108,314	109,328	217,642
I15400154	MRY-BIRP Soundwall	-	-	-	108,314	218,656	326,970
I15400155	MRY-Carmel Valley Transmission Main Improvement	-	-	-	270,785	273,320	544,105
I15400156	MRY-Los Padres Dam Facilities Improvements	-	-	-	108,314	109,328	217,642
I15400157	MRY-Main Replacement Program (2024-2026)	-	-	-	4,432,205	5,083,748	9,515,954
I15400158	MRY-Fire Protection Program (2024-2026)	-	-	-	389,930	393,581	783,511
I15400159	MRY-Pump Station Rehabilitation Program (2024-2026)	-	-	-	996,488	1,005,817	2,002,305
I15400160	MRY-SCADA Maintenance and Improvements Program (2024-2026)	-	-	-	567,083	573,168	1,140,251
I15400161	MRY-Tank Rehabilitation Program (2024-2026)	-	-	-	1,624,709	1,639,919	3,264,628
I15400162	MRY-Well Rehabilitation Program (2024-2026)	-	-	-	2,166,278	1,639,919	3,806,197
I15400163	MRY-Standby Generator Improvement Program (2024-2026)	-	-	-	406,177	409,980	816,157
I15400164	MRY-Well Installation and Replacement Program (2024-2026)	-	-	-	1,516,395	1,530,591	3,046,986
I15400165	MRY-Tank Installation and Replacement Program (2024-2026)	-	-	-	1,516,395	1,530,591	3,046,986
I15480014	TOR-New Well #4	1,122,541	883,996	-	-	-	2,006,536
Grand Total		13,681,204	19,396,494	18,750,844	26,834,566	26,828,800	105,491,908

District #	1542
District Name	Monterey Wastewater

Row Labels	Project Description	Sum of					
		Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPL	SCADA Equipment and Systems	-	6,956	6,930	9,647	11,700	35,232
CAPRPM	Security Equipment and Systems	-	19,873	19,799	19,293	19,500	78,466
CAPRPO	Vehicles	-	9,524	5,271	10,273	394,572	419,640
CAPRPP	Tools and Equipment	-	4,968	4,950	5,788	5,850	21,556
CAPRPQ	Plant Facilities and Equipment	20,834	347,784	356,380	358,853	375,378	1,459,230
I15420003	MWW-Las Palmas MBBR Installation	-	-	-	-	-	-
I15420004	MWW-Spreckels Blvd Main Replacement	-	61,334	-	-	-	61,334
I15420006	MWW-CVR WW Plant-Filter & Screen Improvements	39,323	681,494	-	-	-	720,818
Grand Total		60,158	1,131,935	393,330	403,854	807,000	2,796,276

District #	1550
District Name	Los Angeles County District

Row Labels	Project Description	Sum of Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPB	Mains - Replaced/Restored	86,532	-	-	-	-	86,532
CAPRPC	Mains - Unscheduled	-	619,056	638,514	1,051,478	919,432	3,228,480
CAPRPD	Mains - Relocated	-	-	-	119,618	137,476	257,094
CAPRPE	Hydrants/Valves/Manholes - New	-	11,924	12,176	12,251	12,675	49,027
CAPRPF	Hydrants/Valves/Manholes - Replaced	1,307	171,905	176,210	177,497	184,276	711,196
CAPRPG	Services and Laterals - New	-	3,975	4,059	4,052	4,193	16,278
CAPRPH	Services and Laterals - Replaced	-	1,838,289	1,880,895	2,305,533	2,250,318	8,275,035
CAPRPI	Meters - New	-	14,905	15,344	25,853	26,813	82,915
CAPRPJ	Meters - Replaced	7,732	1,432,872	1,468,088	1,958,256	2,030,454	6,897,401
CAPRPL	SCADA Equipment and Systems	94,796	23,848	24,452	24,599	25,545	193,239
CAPRPM	Security Equipment and Systems	78,228	142,095	123,743	122,994	126,751	593,810
CAPRPN	Offices and Operations Center	27,525	56,639	58,110	58,362	61,425	262,061
CAPRPO	Vehicles	-	155,559	10,543	10,273	97,501	273,875
CAPRPP	Tools and Equipment	177,631	21,861	22,373	22,573	23,400	267,838
CAPRPQ	Plant Facilities and Equipment	410,322	908,214	910,749	819,960	853,132	3,902,376
CAPRPR	Capitalized Tank Rehabilitation	272,098	298,101	306,883	307,726	319,803	1,504,610
D155001	Projects Funded by Others	1,680,689	589,000	589,000	589,000	589,000	4,036,689
I15500009	LA-Duarte - Redrill Santa Fe Well	-	105,455	1,773,058	-	-	1,878,513
I15500021	LA-Rosemead Tank and BPS Reconstruction	-	-	-	-	-	-
I15500022	LA-Duarte Water Supply Imprv Proj - Crownhaven Well	362,506	438,412	558,753	-	-	1,359,671
I15500030	LA-Oswego Well Redrill and Trtmt	-	-	-	-	-	-
I15500032	LA-Redrill Winston Well at Danford	-	-	-	-	-	-
I15500036	LA-Rehab/Redrill Longden Well	528,949	161,089	49,144	49,144	49,144	837,470
I15500037	LA-Combine Domestic/Irrigation System	-	-	-	-	-	-
I15500048	LA-Arlington Well TCE Treatment	3,929,949	876,207	-	-	-	4,806,156
I15500050	LA-Patton Tank Reconstruction/Rehabilitatio	312,243	407,825	2,844,558	-	-	3,564,626
I15500054	LA-Chromium-VI Water Treatment	1,751,203	73,017	-	-	-	1,824,220
I15500058	LA-Emergency Generators	1,639,183	73,017	-	-	-	1,712,200
I15500060	LA-Reconstruct Rosemead Operations Ctr	135,971	333,469	886,331	6,498,835	7,106,315	14,960,920
I15500065	LA-Standby Generator Improvement Program (2021-2023)	-	-	581,948	-	-	581,948
I15500066	LA-Main Replacement Program (2021-2023)	345,754	2,039,127	2,946,150	-	-	5,331,031
I15500067	LA-Well Installation and Replacement Program (2021-2023)	-	-	375,888	-	-	375,888
I15500068	LA-SCADA Maintenance and Improvements Program (2021-2023)	-	408,897	407,364	-	-	816,260
I15500069	LA-Pump Station and PRV Rehabilitation Program (2021-2023)	6,165	887,020	883,845	-	-	1,777,030
I15500070	LA-Well Rehabilitation Program (2021-2023)	-	407,825	304,774	-	-	712,599
I15500071	LA-Tank Rehabilitation and Seismic Upgrades Program (2022-2023)	-	173,326	325,092	-	-	498,418
I15500073	LA-Tank Replacement Program (2021-2023)	-	356,847	355,570	-	-	712,417
I15500074	LA-Main Replacement Program (2024-2026)	-	-	-	5,640,989	6,507,198	12,148,187
I15500075	LA-Pump Station and PRV Rehabilitation Program (2024-2026)	-	-	-	1,050,645	1,060,481	2,111,126
I15500076	LA-SCADA Maintenance and Improvements Program (2024-2026)	-	-	-	614,340	363,006	977,347
I15500077	LA-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	-	-	-	3,512,620	8,855,562	12,368,182
I15500078	LA-Well Installation and Replacement Program (2024-2026)	-	-	-	2,382,906	2,451,132	4,834,038
I15500079	LA-Well Rehabilitation Program (2024-2026)	-	-	-	433,256	874,623	1,307,879
I15500080	LA-Tank Replacement Program (2024-2026)	-	-	-	1,841,337	2,405,214	4,246,551
I15500081	LA-Standby Generator Improvement Program (2024-2026)	-	-	-	630,408	637,171	1,267,579
I15560001	EP-East Pasadena Well #8 Treatment	-	222,313	498,561	1,335,511	2,021,473	4,077,858
I15560002	EP-East Pasadena Booster Station Improvement Program	-	-	-	352,020	546,640	898,660
I15560003	EP-Raymond Basin Replacement Well	-	-	-	1,624,709	2,186,558	3,811,267
I15560004	EP-East Pasadena Mountain View Land Purchase	-	3,545,041	-	-	-	3,545,041
I15560005	EP-East Pasadena Woodward Tanks Replacements	-	-	-	-	472,297	472,297
I15800001	BELL-Bellflower Main Replacements	-	486,782	4,364,611	-	-	4,851,393
I15800002	BELL-Bellflower Main Replacement Program (2024-2026)	-	-	-	1,083,139	1,093,279	2,176,418
Grand Total		11,848,781	17,283,911	23,396,784	34,659,881	44,292,288	131,481,644

District #	1551
District Name	Ventura County District

Row Labels	Project Description	Sum of Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPB	Mains - Replaced/Restored	368,928	-	-	-	-	368,928
CAPRPC	Mains - Unscheduled	168,753	99,367	103,944	318,337	237,902	928,303
CAPRPD	Mains - Relocated	2,374	24,842	-	-	-	27,215
CAPRPF	Hydrants/Valves/Manholes - Replaced	46,046	496,835	509,821	511,269	531,379	2,095,350
CAPRPG	Services and Laterals - New	26,813	-	-	-	-	26,813
CAPRPH	Services and Laterals - Replaced	254,629	1,838,289	1,880,895	2,102,955	2,090,417	8,167,184
CAPRPI	Meters - New	1,787	18,880	18,809	29,615	32,370	101,461
CAPRPJ	Meters - Replaced	482,465	859,524	882,041	1,105,740	1,149,290	4,479,059
CAPRPL	SCADA Equipment and Systems	7,618	34,778	35,638	35,692	37,050	150,777
CAPRPM	Security Equipment and Systems	13,417	57,633	59,397	59,809	68,251	258,505
CAPRPN	Offices and Operations Center	27,121	39,747	49,497	57,879	68,251	242,495
CAPRPO	Vehicles	-	84,658	5,271	5,137	92,626	187,691
CAPRPP	Tools and Equipment	130,520	29,810	29,698	29,904	34,125	254,058
CAPRPQ	Plant Facilities and Equipment	507,116	470,006	468,244	411,909	424,128	2,281,403
D155101	Projects Funded by Others	1,170,890	112,100	112,100	112,100	112,100	1,619,290
I15510017	VEN-Connect 12" Main Between Hillcrest	73,114	161,612	-	-	-	234,726
I15510027	VEN-Upgrade Mayfield Booster Station	-	97,356	-	-	-	97,356
I15510028	VEN-Replc 1,400 Ft 10" Main to Las Posas Tank	-	-	-	-	-	-
I15510030	VEN-Upgrade Springwood Booster Station	132,966	876,207	-	-	-	1,009,173
I15510032	VEN-Replace White Stallion Domestic Booster	1,203,617	872,313	-	-	-	2,075,930
I15510033	VEN-Upgrade Wildwood Booster Station	750,183	842,132	-	-	-	1,592,316
I15510038	VEN-Advanced Metering Infrastructure	156,783	79,748	-	-	-	236,531
I15510040	VEN-Tier 4 Compliance/Standby Power	32,602	438,104	-	-	-	470,706
I15510041	VEN-PSPS Power Storage Project (SGIP)	413,363	321,162	320,013	-	-	1,054,538
I15510042	VEN-SCADA Maintenance and Improvements Program (2021-2023)	-	331,012	329,771	-	-	660,782
I15510043	VEN-Springwood Gradient Main Replacement	-	458,804	1,727,053	-	-	2,185,857
I15510044	VEN-Los Robles Zone PRVs	-	336,456	609,548	-	-	946,004
I15510045	VEN-Charles Oaks Apartment Main Replacement	-	540,369	558,753	-	-	1,099,121
I15510053	VEN-Ventura Freeway Crossing	-	-	332,374	324,942	1,530,591	2,187,907
I15510054	VEN-Tank Rehabilitation and Seismic Upgrades Program (2021-2023)	-	360,218	387,965	-	-	748,184
I15510055	VEN-Standby Generator Improvements	-	-	-	-	-	-
I15510056	VEN-Pump Station Replacement and Rehabilitation Program (2021-2023)	37,788	876,207	872,922	-	-	1,786,917
I15510057	VEN-Integrated Water Supply Project	-	-	-	541,570	1,093,279	1,634,849
I15510058	VEN-Peak Supply Improvement Project (CMWD)	-	-	-	324,942	546,640	871,581
I15510059	VEN-Pump Station Replacement and Rehabilitation Program (2024-2026)	-	-	-	974,825	1,639,919	2,614,744
I15510060	VEN-SCADA Maintenance and Improvements Program (2024-2026)	-	-	-	321,347	363,006	684,353
I15510061	VEN-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	-	-	-	541,570	546,640	1,088,209
I15510062	VEN-Standby Generator Improvements Program (2024-2026)	-	-	-	411,593	754,363	1,165,956
I15570002	ER-El Rio Supply Project	-	-	-	965,077	1,298,269	2,263,346
I15570003	ER-El Rio Pump Station Facility Improvements	-	-	-	618,472	936,394	1,554,866
I15570004	ER-El Rio WTP Chlorine Facility Improvements	-	-	-	297,863	-	297,863
I15570005	ER-El Rio Well 2 Nitrate Treatment	-	-	-	-	273,320	273,320
I15570006	ER-Small Main Replacement Program	-	-	-	270,785	273,320	544,105
I15570007	ER-El Rio Tank Replacements	-	-	-	-	-	-
I15570008	ER-El Rio System Looping	-	-	-	-	-	-
I15570001	ER-El Rio Interconnect with UW	-	116,828	77,593	-	-	194,421
Grand Total		6,008,893	10,874,995	9,371,347	10,373,332	14,133,629	50,762,196

District #	1560
District Name	Sacramento District

Row Labels	Project Description	Sum of Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025	Sum of All
CAPRPA	Mains - New	375,022	-	-	-	-	375,022
CAPRPB	Mains - Replaced/Restored	650,375	99,367	-	-	-	749,742
CAPRPC	Mains - Unscheduled	71,697	521,584	514,771	869,447	731,256	2,708,754
CAPRPD	Mains - Relocated	-	298,101	-	-	-	298,101
CAPRPE	Hydrants/Valves/Manholes - New	38,049	-	-	-	-	38,049
CAPRPF	Hydrants/Valves/Manholes - Replaced	267,080	449,139	406,867	388,757	402,678	1,914,521
CAPRPG	Services and Laterals - New	(19)	9,937	9,899	9,647	9,750	39,214
CAPRPH	Services and Laterals - Replaced	608,335	963,860	903,819	1,285,407	1,170,009	4,931,431
CAPRPI	Meters - New	125,891	59,620	59,397	104,665	109,396	458,969
CAPRPJ	Meters - Replaced	49,625	1,394,119	1,360,184	2,258,651	3,383,472	8,446,050
CAPRPL	SCADA Equipment and Systems	125,620	44,715	45,537	45,339	52,650	313,862
CAPRPM	Security Equipment and Systems	94,412	44,715	98,994	135,052	141,376	514,550
CAPRPN	Offices and Operations Center	8,880	177,867	67,316	67,526	70,201	391,790
CAPRPO	Vehicles	-	396,833	84,340	71,913	146,251	699,337
CAPRPP	Tools and Equipment	-	9,937	18,809	18,329	19,500	66,574
CAPRPQ	Plant Facilities and Equipment	768,843	1,988,035	1,649,248	1,375,603	1,501,512	7,283,240
CAPRPR	Capitalized Tank Rehabilitation	372,514	288,164	192,049	189,073	203,777	1,245,578
CAPRPS	Engineering Studies	(460)	-	-	-	-	(460)
D156001	Projects Funded by Others	1,183,284	7,748,200	6,973,000	12,793,935	1,877,411	30,575,830
I15600002	West Placer - SFF (Walerga Rd Tank)	-	6,453,085	-	-	-	6,453,085
I15600007	SAC-Elverta Road Bridge Water Main	-	-	-	-	-	-
I15600072	SAC-Sacramento Main Improvement Program (2018-2020)	178,705	-	-	-	-	178,705
I15600082	SAC-Standby Generators Improvements	134,441	778,851	-	-	-	913,291
I15600083	SAC-Backyard Mains Replacement Program (2018-2020)	895,500	97,356	-	-	-	992,856
D156201	Projects Funded by Others	46,137	12,350	-	12,350	-	70,837
D156301	Projects Funded by Others	480,459	9,785	-	125,400	-	615,644
D156401	Projects Funded by Others	30,396	7,600	7,600	-	7,600	53,196
D156501	Projects Funded by Others	1,965	4,750	4,750	4,750	4,750	20,965
I15600097	SAC-Main Replacement Program (2021-2023)	-	-	-	-	-	-
I15600098	SAC-Well Installation and Replacement Program (2021-2023)	2,147,666	2,052,381	2,654,582	-	-	6,854,629
I15600099	SAC-Well Rehabilitation Program (2021-2023)	585,894	393,551	1,794,104	-	-	2,773,549
I15600100	SAC-SCADA Maintenance and Improvements Program (2021-2023)	703,148	954,092	950,515	-	-	2,607,755
I15600101	SAC-Standby Generator Improvement Program (2021-2023)	-	252,852	251,947	-	-	504,798
I15600102	SAC-Service Saddle Replacement Program (2021-2023)	56,725	2,920,690	-	-	-	2,977,416
I15600103	SAC-Suburban Rosemont Hydraulic Improvements	276,982	166,735	166,187	3,105,360	-	3,715,263
I15600104	SAC-Security Park Booster Pump Project	-	613,777	611,580	-	-	1,225,357
I15630002	DUN-Dunnigan Wtr System Improvement	688,948	38,943	-	-	-	727,891
I15640001	GEY-Geyersville Storage Project	-	399,669	1,523,870	-	-	1,923,539
I15650002	MEA-Meadowbrook Storage Project	-	698,062	695,770	974,825	-	2,368,657
D156601	Projects Funded by Others	33,447	-	-	-	-	33,447
D156701	Projects Funded by Others	147	23,180	122,313	-	-	145,640
I15600106	SAC-Isleton Storage Tank	-	-	-	216,628	1,639,919	1,856,547
I15600108	SAC-Wittkop 2 Water Treatment Plant	-	-	-	216,628	4,140,248	4,356,876
I15600109	SAC-Vintage 1 Treatment	-	-	-	270,785	2,554,994	2,825,778
I15600110	SAC-Malaga Well Replacement and TCP Treatment	-	555,782	5,982,734	649,883	-	7,188,399
I15600111	NOR-Main Replacement Program (2024-2026)	-	-	-	5,415,696	5,466,396	10,882,092
I15600112	NOR-SCADA Maintenance and Improvements Program (2024-2026)	-	-	-	661,597	1,050,807	1,712,405
I15600113	NOR-Well Installation and Replacement Program (2024-2026)	-	-	-	13,972,495	14,813,934	28,786,428
I15600114	NOR-Well Rehabilitation Program (2024-2026)	-	-	-	3,032,790	3,061,182	6,093,971
I15600115	NOR-Standby Generator Improvement Program (2024-2026)	-	-	-	1,299,767	1,311,935	2,611,702
I15600116	SAC-Service Saddle Replacement Program (2024-2026)	-	-	-	1,733,023	2,405,214	4,138,237
I15630004	DUN-Dunnigan Well 2 Rplcmt (New Well 3)	766,555	681,494	-	-	-	1,448,049
I15640002	GEY-Geyersville Replace Well 2 (New Well 4)	17,446	-	-	-	-	17,446
I15640003	GEY-Geyersville PSPS Generator Improvements	84,977	540,750	-	-	-	625,727
I15660001	FRV-Fruitridge Vista Metering	4,350,955	3,890,472	3,877,698	4,505,859	-	16,624,984
I15660002	FRV-Fruitridge Vista Mains Improvement Program	9,272,497	8,892,508	8,863,309	7,680,540	6,723,667	41,432,521
I15660003	FRV-Well Rehabilitation Program (2021-2023)	204,046	1,406,998	-	-	-	1,611,043
I15660004	FRV-South Highway 99 Crossing	-	-	-	270,785	874,623	1,145,408
I15660005	FRV-Well Rehabilitation Program (2024-2026)	-	-	-	541,570	546,640	1,088,209
I15660006	FRV-Well Replacement and Installation Program (2024-2026)	-	-	-	1,516,395	3,279,838	4,796,232
I15670001	HILL-PSPS Generator Improvements-Hillview	236,820	809,806	865,163	-	-	1,911,789
I15670002	HILL-New Coarsegold Iron & Manganese WTP	159,832	1,529,345	2,539,784	-	-	4,228,961
I15670003	HILL-New Goldside Iron-Manganese WTP	158,250	509,782	2,031,827	1,486,709	-	4,186,567
I15670004	HILL-Hillview Tank Rehab Program (2024-2026)	-	-	-	555,650	560,852	1,116,503
I15670005	HILL-Hillview Tank Replacement Program (2024-2026)	-	-	-	1,291,102	1,303,189	2,594,291
I15670006	HILL-Hillview Pump Station Rehabilitation Program (2024-2026)	-	-	-	-	546,640	546,640
I15670007	HILL-Oakhurst 420 Site Bypass	-	-	-	-	-	-
I15670008	HILL-Oakhurst Junction Wells Site Improvements	-	-	-	-	-	-
I15670009	HILL-PSPS WTP Power Storage Project	-	329,382	790,015	-	-	1,119,397
I15860001	BASS-Bass Lake Flat Rate to Metered Conversion	-	-	886,331	5,496,931	-	6,383,262
Grand Total		26,251,085	49,518,219	47,004,311	74,650,859	60,111,667	257,536,141

District #	1561
District Name	Larkfield District

Row Labels	Project Description	Sum of				
		Prior	Sum of 2022	Sum of 2023	Sum of 2024	Sum of 2025
CAPRPC	Mains - Unscheduled	1	19,873	19,799	27,975	28,275
CAPRPF	Hydrants/Valves/Manholes - Replaced	991	15,899	16,829	16,399	19,500
CAPRPH	Services and Laterals - Replaced	15,180	35,772	35,638	44,857	42,900
CAPRPI	Meters - New	-	-	-	6,753	6,825
CAPRPJ	Meters - Replaced	22,050	94,399	59,397	72,349	78,001
CAPRPL	SCADA Equipment and Systems	27,426	-	-	-	-
CAPRPM	Security Equipment and Systems	11,290	18,880	18,809	19,004	21,450
CAPRPN	Offices and Operations Center	14,402	3,975	3,960	3,859	4,875
CAPRPP	Tools and Equipment	14,260	2,981	2,970	2,894	3,900
CAPRPQ	Plant Facilities and Equipment	86,734	119,240	123,743	124,441	131,626
D156101	Projects Funded by Others	92,801	23,750	86,298	23,750	23,750
I15610009	LRK-Londonberry Drive Creek Crossing	400,069	611,738	609,548	-	-
I15610012	LRK-Replace Backwash Tank at WTP	121,870	389,425	581,948	-	-
I15610015	LRK-Main Replacement Program (2021-2023)	67,115	591,347	589,230	-	-
I15610016	LRK-Well Rehabilitation and Maintenance Program (2021-2023)	71,347	224,304	152,387	-	-
I15610017	LRK-SCADA Master Plan and Improvements Program (2021-2023)	248,894	486,782	484,957	-	-
I15610018	LRK-Tank Rehabilitation and Seismic Upgrades Program (2021-2023)	1,836	254,891	253,978	-	-
I15610019	LRK-Standby Generator Improvement Projects	909	428,217	325,092	-	-
I15610020	LRK-Windsor Emergency Interconnect	-	223,920	-	-	-
I15610021	LRK-Storage Tank at Water Treatment Plant	-	222,313	553,957	812,354	819,959
I15610022	LRK-Wikiup Drive Water Main Replacement	69,034	1,019,563	2,793,763	-	-
I15610023	LRK-Larkfield Wildfire Recovery-Meters & Services	7,355,738	33,101	-	-	-
I15610024	LRK-PSPS Power Storage Project	-	-	443,165	-	-
I15610025	LRK-Main Replacement Program (2024-2026)	-	-	-	1,191,453	1,202,607
I15610026	LRK-SCADA Master Plan and Improvements Program (2024-2026)	-	-	-	236,285	238,820
I15610027	LRK-Tank Rehabilitation and Seismic Upgrades Program (2024-2026)	-	-	-	297,863	300,652
I15610028	LRK-Well Rehabilitation and Maintenance Program (2024-2026)	-	-	-	162,471	163,992
I15610029	LRK-Larkfield Generator Installations	-	-	-	247,785	-
I15610030	LRK-WTP Treatment Upgrades	-	-	-	812,354	-
Grand Total		8,621,947	4,820,369	7,155,468	4,102,846	3,087,133
						27,787,762

ATTACHMENT 2

CAPITAL ESTIMATE OF CALIFORNIA AMERICAN WATER CHARGES FOR AMERICAN WATER ENTERPRISE SOLUTIONS

Company Code	Unique ID	Title	Start	Finish	Prior Year Charges	2022	2023	2024	2025
1015	T1501ZZ9	(DMS) Document Management System	Jan 2022	Jun 2022		18,934	0	0	0
1015	T1501ZZ35	Advanced Analytics Program	Feb 2022	Dec 2023		94,668	94,668	0	0
1015	T1501ZZ19	Application Architecture Upgrade	Feb 2022	Dec 2023	32,806	126,224	63,112	0	0
1015	T1501ZZ24	Business Analysis Process Mapping system	Jan 2022	Dec 2023		63,112	31,556	0	0
1015	T1501ZZ34	Business Analytics Program	Feb 2022	Dec 2023		142,633	138,846	0	0
1015	T1501ZZ1	Business Projects	Feb 2022	Dec 2026		381,787	1,213,993	2,058,939	3,743,240
1015	T1501ZZ25	Capital Portfolio/Project Management System Enh	Jan 2022	Dec 2023		15,778	6,311	0	0
1015	T1501ZZ2	Contract Management System	Jan 2022	Jun 2022		5,901	0	0	0
1015	T1501ZZ8	Customer 360 (Qualtrics) Data Enhancements	Jan 2022	Jun 2022		12,622	0	0	0
1015	T1501ZZ5	Customer Digital Channels	Jan 2022	Dec 2023		154,624	75,734	0	0
1015	T1501ZZ37	Data Analytics Platform	Feb 2022	Dec 2023		189,336	189,336	0	0
1015	T1501ZZ27	Data Privacy	Feb 2022	Dec 2022	56,969	94,668	0	0	0
1015	T1501ZZ36	Enterprise Data Governance	Feb 2022	Dec 2023		94,668	94,668	0	0
1015	T1501ZZ33	Enterprise GIS	Feb 2022	Dec 2023		107,290	107,290	0	0
1015	T1501ZZ29	Enterprise Network Upgrade	Feb 2022	Dec 2022	141,161	126,224	0	0	0
1015	T1501ZZ30	Enterprise SCADA Security	Feb 2022	Dec 2022		63,112	0	0	0
1015	T1501ZZ15	Extreme Enhancements	Jan 2022	Dec 2022	17,633	75,734	0	0	0
1015	T1501ZZ3	GRC 12.0 Phase 3 & 4	Jan 2022	Mar 2022		18,934	0	0	0
1015	T1501ZZ21	HRIS Enhancements	Feb 2022	Dec 2023		31,556	31,556	0	0
1015	T1501ZZ17	Mapcall	Feb 2022	Dec 2024		189,336	189,336	208,270	0
1015	T1501ZZ23	Merger & Acquisition (DSP) Enhancements	Feb 2022	Dec 2023		37,867	37,867	0	0
1015	T1501ZZ6	Meter Data Management System	Jan 2022	Dec 2026	278,063	258,908	23,002	25,336	27,704
1015	T1501ZZ28	MyAccess Enhancements	Feb 2022	Dec 2022		25,245	0	0	0
1015	T1501ZZ7	myWater v2	Feb 2022	Dec 2022		94,668	0	0	0
1015	T1501ZZ31	Nuance IVR Enhancements	Feb 2022	Dec 2022		25,245	0	0	0
1015	T1501ZZ38	Platform	Feb 2022	Dec 2022		517,519	0	0	0
1015	T1501ZZ22	PowerPlan Upgrade	Jan 2022	Dec 2026		252,448	63,112	0	0
1015	T1501ZZ4	PowerTax - Provision	Jan 2022	Mar 2022	11,589	6,311	0	0	0
1015	T1501ZZ18	S/4 Implementation	Jan 2022	Dec 2024		94,668	1,262,241	1,262,241	0
1015	T1501ZZ11	SAP Enhancements - Customer	Feb 2022	Dec 2023		18,934	18,934	0	0
1015	T1501ZZ12	SAP Enhancements - ERP	Feb 2022	Dec 2023	32,394	18,934	18,934	0	0
1015	T1501ZZ13	SAP Enhancements - HTR	Feb 2022	Dec 2023		25,245	25,245	0	0
1015	T1501ZZ14	SAP Enhancements - OPs	Feb 2022	Dec 2023		18,934	18,934	0	0
1015	T1501ZZ20	SAP GRC and Basis Enhancements	Feb 2022	Dec 2023		18,934	18,934	0	0
1015	T1501ZZ10	SAP Technical & Functional Upgrade	Feb 2022	Dec 2026		31,556	31,556	31,556	31,556

CAPITAL ESTIMATE OF CALIFORNIA AMERICAN WATER CHARGES FOR AMERICAN WATER ENTERPRISE SOLUTIONS

Company Code	Unique ID	Title	Start	Finish	Prior Year Charges	2022	2023	2024	2025
1015	T1501ZZ32	SIEM Enhancements	Feb 2022	Dec 2022		44,178	0	0	0
1015	T1501ZZ26	Test Global Automation	Jan 2022	Dec 2024	54,752	25,245	0	94,668	0
1015	T1501ZZ16	Work 1 View	Feb 2022	Dec 2024		110,446	47,334	121,491	0
1015	R15-01K3.16-P-0019	AMI SAP Integration	May 2016	Dec 2022	45,434	0	0	0	0
1015	R15-01K3.18-P-1044	Enterprise Meter Data Management	Jun 2018	Dec 2022	2,255	0	0	0	0
1015	T15-0132-P-2000	Enterprise MDM Platform v2	Nov 2019	Dec 2022	199,519	0	0	0	0
1015	T15-0132-P-1000	Enterprise MDM Platform v1	Nov 2019	Dec 2022	16,757	0	0	0	0
1015	T15-0132-P-0998	Enterprise MDM Platform-C-P1119	Nov 2019	Dec 2022	26,434	0	0	0	0
1015	T15-011I-P-1002	Advanced Analytics	Apr 2021	Dec 2021	70,014	0	0	0	0
1015	T15-011I-P-1003	Business Analytics	Apr 2021	Dec 2021	41,731	0	0	0	0
1015	T15-011I-P-1001	Data Analytics	Apr 2021	Dec 2021	122,451	0	0	0	0
1015	T15-0113-P-1000	Meter Ops	Nov 2019	Jun 2022	115,858	51,417	0	0	0
1015	T15-011Y-P-1000	Accounting - Payroll standard & aut	May 2021	Mar 2022	5,768	-5,768	0	0	0
1015	T15-0115-P-0998	Alerts 1 View-C-P1119	Nov 2019	May 2022	15,720	0	0	0	0
1015	T15-011W-P-1000	SuccessFactors EmplCentral & WFA 20	Jun 2021	Dec 2022	43,961	99,170	0	0	0
1015	T15-0115-P-1000	Alerts 1 View	Nov 2019	May 2022	74,580	13,002	0	0	0
1015	T15-011R-P-1000	e-Builder	Apr 2021	Aug 2022	1,473	93,155	0	0	0
1015	T15-0113-P-2000	MeterOps Enhancements 2021	May 2021	Jun 2022	6,669	0	0	0	0
1015	TOTAL				1,413,989	3,883,402	3,802,500	3,802,500	3,802,500